A STUDY TO ASSESS THE EFFECT OF PELVIC GIRDLE PAIN ON FUNCTIONAL ACTIVITIES AMONG ANTENATAL MOTHERS ATTENDING OPD OF PSG HOSPITAL, COIMBATORE

By

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A Dissertation submitted to **The Tamil Nadu Dr.M.G.R. Medical University**, Chennai, in partial fulfillment for the requirement of the degree of

MASTER OF SCIENCE IN NURSING

Branch III Obstetrics and Gynecological Nursing

2015

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Proposal Presentation on: 17/04/2014

Approved by the Dissertation Committee on: 29/07/2015

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CERTIFICATE

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ACKNOWLEDGEMENT

My heartfelt praises to **God Almighty** for the enriched blessings and abundant grace and mercy which enriched me through every step of this work and convert this work into reality and without whom it would not have been possible. Through him, I dedicated my work to the most influential and ever motivating spirit, **My Father, Mr. Sudhan**.

I have been fortunate in having received the cooperation and guidance of many people in completing this research. I consider it a privilege to acknowledge here the help and guidance extended by each one of them.

I submit my sincere thanks and respect to our **Managing Trustee** for all the facilities which had been provided to us at the institution.

I express my deep sense of gratitude to our beloved principal **Dr. Elizabeth Jean Abraham M.Sc. (N), Ph.D.,** PSG College of Nursing. The words of appreciation and encouraging support that principal has bestowed on me, kindled my spirit and enthusiasm to go ahead and accomplish this study successfully.

I express my sincere gratitude to my research guide **Dr.Malarvizhi G. M.Sc., Ph.D (N)., Vice principal, HOD of Child Health Department,** PSG College of Nursing for unwavering encouragement, invariable help, insisting support, timely correction and scholarly guidance in each and every step of this study which could make the study possible and purposeful.

I wish to extend my wholehearted thanks to my subject guide **Prof. S. Baby, M.Sc. (N) HOD of Obstetrics and Gynaecological Nursing**, PSG College of Nursing. Thank you madam for your dexterous, constructive and critical guidance, logistic support, valuable suggestions, affectionate and enduring support, timely motivation and above all the patience extended for clarifying my doubts and for the enthusiastic words which kept me on track towards the successful completion of my study.

I have immense pleasure in thanking **Dr. Seetha Panikar, D.G.O, MD,DNB,** Professor and HOD of Obstetrics and Gynaecology, PSG Hospitals, for the generous support, valuable suggestion and guidance which helped me in the completion of this work.

I am extremely thankful to **Prof.SreeRenjini, M.Sc (N).,** and **Mrs.M.D.Shanthi, M.Sc (N),** Associate Professor, for their keen interest, constant encouragement and enduring support throughout the study.

I proudly and honestly express my grateful thanks to all **Faculty Members of Obstetrical and Gynaecological Nursing Department, PSG College of Nursing** for their valuable suggestion and support.

I extend my gratitude towards **Mr.Subramaniam,** statistician for this valuable corrections and kindness which helped me in doing my data analysis.

I express my sincere thanks to the **Ethical Committee** of PSG institution for their valuable suggestions and approval for the study being conducted.

I extend my whole-hearted thanks to **OG OPD Staff Nurses, Nursing Assistants, Library Staffs and All Non-teaching staff members** for rendering all the facilities and kindly approach during the time of study.

I express my grateful thanks to my beloved juniors specially **Ms.Ramya and Ms. Thenmozhi** and especially to my classmates for their support during the time of the study.

I honestly express my grateful thanks to **Mr. Manickaraj, my guardian,** for his continued and unfailing encouragement and emotional support in both good and bad times throughout my study.

I extend my heartful unexplainable thanks to **my beloved parents, Mrs.Jamuna Ravi Kumar, my brothers Mr. Gowtham and Mr. Naresh and family** members who are the source of strength, encouragement, inspiration in every step of my life.

I express my grateful thanks to my **well-wisher Mr.Balaji** for his psychological support during the time of study.

My sincere thanks and appreciation for **Mr. Mohan Kumar** of cool blue for his patience, diligence in the final typing, alignment, editing and organization of the manuscripts and his excellent work towards the final bound copy of the thesis.

I continue to be indebted to all, for their prayers, support and care extended to me directly and indirectly in the successful completion of my study

ABSTRACT

Effect of Pelvic Girdle Pain on Functional Activities among Antenatal Mothers

During pregnancy 50% of all women experience pelvic pain. For majority of women, the pelvic pain disappears within the first 1-3 months after delivery. However, approximately 25% of women experience persistent pain, and in 7%, the pain is severe. **Objectives:** 1.To find the prevalence of pelvic girdle pain among antenatal mothers attending antenatal OPD. 2. To assess the risk factors of pelvic girdle pain. 3. To find the association of pelvic girdle pain on functional activities of antenatal mothers. **Materials and methods:** A descriptive survey design was designed to obtain information from antenatal mothers regarding prevalence and risk factors of pelvic girdle pain. The study conducted was in OG OPD in PSG Hospitals, Coimbatore. Convenient sampling technique was used to select the samples. Prevalence of pelvic girdle pain was assessed by doing the assessment among antenatal mothers between is 20-36 weeks of gestation. Two hundred and fifty six mothers were screened for pelvic girdle pain using various clinical examination tests such as Active straight leg raise test, p4 test, distraction test, compression test, Patrick – Faber test and palpation of pubis symphysis. Out of these 256 mothers, 100 mothers demonstrated positive for pelvic girdle pain for whom baseline data, level of functional activity and level of pain by using visual analogue scale were assessed. **Major findings:** Majority 97% of antenatal mothers were in 20 – 26 weeks of gestation. Fifty three mothers were primi mothers. Prevalence of pelvic girdle pain among antenatal mothers was 39 percentage. Correlation between pelvic girdle pain and level of functional activity shows that functional activities decreased with increasing pain level ($r = 0.615$). There was no association between selected demographic and obstetrical variables such as age at menarche, mode of delivery, history during pregnancy, history of back pain, height and weight with pelvic girdle pain and level of functional activity among antenatal mother with pelvic girdle pain.

Key words: Pelvic girdle pain, level of functional activities, antenatal mothers.

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXURES

LIST OF ABBREVATIONS

Sl. No	Abbreviations	
1	BMI	: Body mass index
2	cm	: Centimetre
3	d.f	: Distribution frequency
4	EDD	: Expected delivery date
5	f	: Frequency
6	GDM	: Gestational diabetic mellitus
7	Kg	: Kilogram
8	LMP	: Last menstrual period
9	LP	: Leg pain
10	LBP	: Low back pain
11	LSCS	: Lower segment of cesarean section
12	NVD	: Normal vaginal delivery
13	n	: Number of sample
14	NS	: Not significant
15	OPD	: Outpatient department
16	PGP	: Pelvic Girdle Pain
17	PGS	: Pelvic Girdle Syndrome
18	PIH	: Pregnancy Induced Hypertension
19	P4 test	: Provocation Test
20	PPGP	: Pregnancy Related Pelvic Girdle Pain
21	SIJ	: Sacroiliac Joint
22	SD	: Standard Deviation
23	Tab	: Tablets
24	Wks	: Weeks
25	Yrs	: Years

CHAPTER I

INTRODUCTION

1.1 Background of the study

During pregnancy 50% of all women experience pelvic pain. For majority of women, pelvic pain disappears within the first 1-3 months after delivery. However, approximately 25% of women experience persistent pain, and in 7%, the pain is severe. Moreover, women who experience persistent lumbo pelvic pain after 3 months in postpartum period are at substantial risk for new episodes or chronic lumbo pelvic pain later in life. Pelvic girdle pain (PGP) is one of the major subgroups of lumbo pelvic pain related to pregnancy. (Gen McGlashan ., 2010)

The reported prevalence of pelvic girdle pain during pregnancy was found to be 14 to 33%. According to European guidelines, the classification of pelvic girdle pain can only be made after lumbar causes have been excluded. Nevertheless, the majority of studies does not differentiate between lumbar pain and do not exclude women who reported only lumbar pain. It is important to distinguish different subgroups of lumbo pelvic pain, because different subgroups exhibit different presentations. Moreover, research suggests different treatment strategies for pelvic girdle pain and lumbar pain in relation to pregnancy. Pregnancy related pelvic girdle pain causes pain instability and limitation of mobility and functioning in any of the three pelvic joints. (Clinical practice guidelines 2012)

Low back pain during pregnancy may not be different from low back pain in non-pregnant individuals. Pelvic girdle pain may be specifically related to pregnancy and can be diagnosed based on the clinical presentation and the posterior pelvic pain provocation test. (Katonis .P., 2011)

The point prevalence of pregnant women suffering from pelvic girdle pain is about 20%. Clinically persistent pelvic girdle pain from the post-partum stage to two years after childbirth has a reported incidence of 5% to 8.5%.

It is clear that symptoms of pelvic girdle pain are often mild but can be seriously disabling. Women with persistent pain report high disability and difficulties in returning to work. Pelvic girdle pain is a specific form of low back pain defined as pain experienced between the posterior iliac crests and gluteal fold particularly in the

vicinity of sacroiliac joints. Pain can radiate to the posterior thigh or symphysis pubis. Standing, walking and sitting ability is affected. (Verstraele .E.H., 2013)

Long - term morbidity can be reduced if pregnant women presenting with pelvic girdle pain are diagnosed early, given accurate information and managed appropriately. There is a need for increasing awareness about this condition among healthcare professionals who for pregnant women, particularly given the high incidence of recurrence in subsequent pregnancies.

In a 12-year follow-up study of women with some type of lumbo -pelvic pain is severe enough to require sick leave while pregnant, 92% reported pain during subsequent pregnancy and 86% had recurrent pain while not pregnant. Pregnancy is thereby a risk factor for persistent pelvic girdle pain requiring long-term sick leave. (Brynhildsen et al., 1998)

1.2 Need for the study:

Pregnancy is supposed to be a happy period of life for women, associated with great expectations for the immediate future of pregnancy period, delivery and motherhood. Among many women it seems to be an expectation that life continues more or less normally during pregnancy. This condition impacts negatively on many of the daily activities, especially weight bearing activities such as walking, standing and several women have problems moving around. Hence, pelvic girdle pain affects both the activities of daily life and the quality of life during pregnancy. It has been an accepted understanding that pelvic girdle pain is most frequently experienced late in pregnancy, and that it disappears after delivery. It has also been reported that PGP is the major cause for sick-leave among pregnant Scandinavian women and the costs to society may be great. (Hilde Slendal Robinson, 2010)

Around 1 in 5 pregnant women experience mild discomfort in the back or front of the pelvis during pregnancy. Women experience different symptoms and these are more severe in some women than others.

Pain in the back of the pelvis is known as pelvic girdle pain (PGP). It is also called as sacroiliac joint (SIJ) pain. The pain or functional disturbances that are related to this condition must be reproducible by specific clinical tests for a definitive diagnosis.

During pregnancy hormone called relaxin is produced. Relaxin softens the ligaments (the tough, flexible tissues that connect the bones) in pelvis and other joints. Softened ligaments helps the baby to pass through pelvis during birth. (Aldabe et al., 2012)

The pain is usually made worse by lying on back, turning over in bed, walking and standing from a sitting position. Pelvic girdle pain is often worse at night, particularly more active during the day. (Bastiaanssen J.M., 2005)

If a woman experiences pelvic girdle pain during one pregnancy she is more likely to experience it in subsequent pregnancies; but the severity cannot be determined. Despite the fact that pregnancy-related pelvic girdle pain is a common ailment, it is still poorly described and understood. (Brittestuge, 2012)

In India, there is little information about the prevalence, incidence, etiology and prognosis of pregnancy pelvic girdle pain. Among pregnant mothers in European population, the average reported prevalence of pregnancy related low back pain and pelvic girdle pain is 45.3% (range 3.9-89.9%). (Gupta Monika et al., 2014)

Globally, there are approximately 240 million pregnant women annually and about 150-200 million women deliver every year. Pelvic girdle pain in pregnancy has a prevalence of 45% in all pregnant women and 25% of all postpartum women suffer from pelvic girdle pain. During pregnancy serious pelvic girdle pain occurs in about 25% and severe disability occurs in about 8% of patients. After pregnancy problems are serious in about 7% of women. (Vleeming A et al., 2011**)**

Several possible risk factors for development of pelvic girdle pain in pregnancy have been examined, and a recent review reported a total of 15 possible risk factors for lumbo pelvic pain (combination of LBP and PGP) in pregnancy. Strong evidence was reported for strenuous work, previous low back pain and previous pelvic girdle pain as risk factors.

PGP can begin as early as 8 to 12 weeks of pregnancy or as late as the last few days before giving birth. If the pain is felt only in the final days of pregnancy, it may be the baby's head engaging or moving down into the pelvis. In this case, it should be found that whether the pain disappears after the baby is born.

After reviewing many literatures, based on above statistics investigator during her clinical postings found that the prevalence of pelvic girdle pain among pregnant women was high and most of the pregnant women had inadequate knowledge regarding pelvic girdle pain.

1.3 Statement of the problem :

A study to assess the effect of pelvic girdle pain on functional activities among antenatal mothers attending OPD of PSG Hospital, Coimbatore

1.4 Objectives :

1. To find the prevalence of pelvic girdle pain among antenatal mothers attending antenatal OPD of PSG hospitals.
2. To identify the risk factors of pelvic girdle pain.
3. To find the correlation between pelvic girdle pain and level of functional activities among antenatal mothers.
4. To find the association between level of pain and functional activities among antenatal mothers with their selected demographic and obstetrical variables.

1.5 Assumption

Pelvic girdle pain is a common problem among antenatal mothers.

1.6 Hypothesis:

There will be a significant association between pelvic girdle pain and functional activities among antenatal mothers.

1.7 Operational definition:

Pelvic girdle pain:

Pain experienced by antenatal mothers in any of the three pelvic joints, symphysis pubis and two sacroiliac joints as measured by various clinical examination tests like active straight leg raise test, p4 test, compression test, distraction test, Patrick – Faber test and palpation of symphisis pubis.

Functional activities:

The functional activities refers to daily activities like dressing, standing, bending down, climbing stairs, lying down, carrying heavy objects, running and doing house works.

Antenatal mothers:

The antenatal mothers who are between 20 – 36 weeks of gestation age.

1.8 Projected Outcome :

Prevalence rate of pelvic girdle pain among pregnant women is high and it affect their normal functional activities**.**

1.9 Conceptual framework:

Modified Health Belief Model by Becker, Drachmann for effect of pelvic girdle pain on functional activities among antenatal mothers.

The present study adopted Becker health belief model. This is done by focusing on the attitudes and beliefs of individuals. The Health Belief Model was first developed in 1950s by social psychologists Hochbaum, Rosenstock. Becker health belief theory identifies the need of the mothers and provide self-instructional pamphlet regarding pelvic girdle pain. Hence Becker health belief model was adopted for the study.

Central theory refers to what the researcher want to accomplish. This model focuses on individual perception, modifying factors and likely hood action. Individual perception refers to perceived susceptibility of seriousness of disease condition. Modifying factors includes age, sex, ethnicity, and personality, socioeconomic and obstetrical variables. Likely hood action refers to perceived benefits versus behavioral change.

The central purpose of this study was provide self-instructional pamphlet regarding pelvic girdle pain among antenatal mothers. In this study, individual perception identifies the pain felt through the clinical examination test by using visual

analogue scale and level of functional activities among antenatal mothers with pelvic girdle pain. Modifying factors of this study was demographic variables like age, weight, height, BMI and general condition. Likely hood action was to provide education through self-instructional pamphlet regarding pelvic girdle pain among antenatal mothers. Identification was assessed by demographic and obstetrical variables, intensity of pain level and level of functional activities among antenatal mothers with pelvic girdle pain.

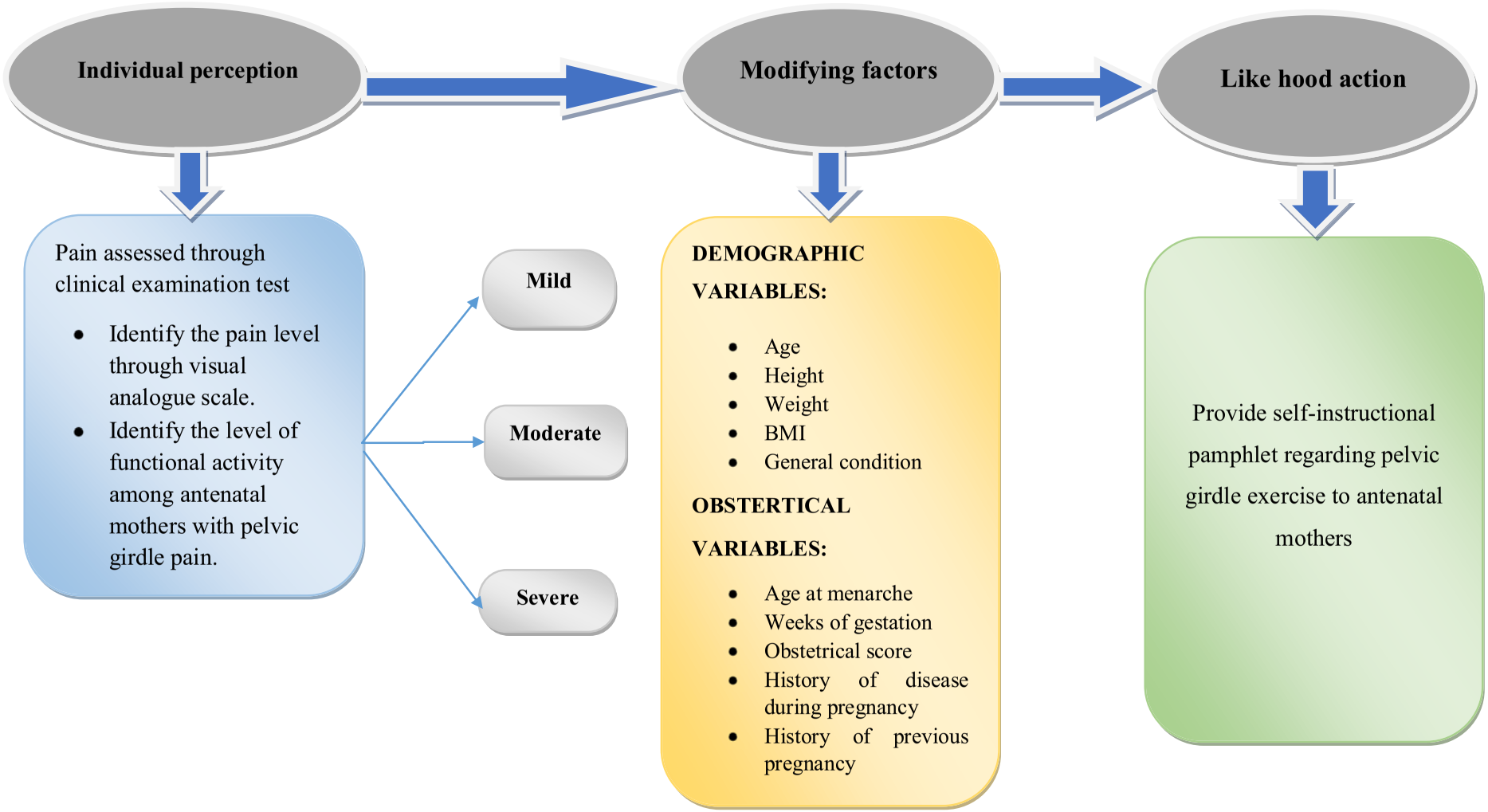

Figure 1.1: Modified Health Belief Model by Becker, Drachmann for effect of pelvic girdle pain on functional activities among antenatal mothers

CHAPTER II

REVIEW OF LITERATURE

A literature review is the critical analysis of segment of published research studies, reviews of literature, and theoretical articles. A literature review is an evaluation report of studies found in literatures related to selected areas. The review should describe, summarize, evaluate and clarify the literature. It should give a theoretical basis for the research and help to determine the nature of research. A literature review goes beyond the search for information and includes the identification and articulation of relationships between the literatures and field of research.

Literature related to various aspects of the study are as follows;

- Literatures related to prevalence of pelvic girdle pain.
- Literatures related to causes of pelvic girdle pain.
- Literatures related to risk factors of pelvic girdle pain.
- Literatures related to clinical assessment of pelvic girdle pain.
- Literatures related to functional questionnaires of pelvic girdle pain.

Literatures related to prevalence of pelvic girdle pain

A cross sectional descriptive study was conducted on prevalence and nature of pelvic girdle pain in pregnant mothers at Australian public hospital antenatal clinic. A total of 105 primi gravida mothers participated in the study. Main objective was to determine the prevalence and nature of pelvic girdle pain in pregnant mothers. Visual analogue scale was used to measure the pain intensity. High prevalence rates of 71% were self-reported by mothers during the 3rd trimester of pregnancy and association were found between PGP, multiparty and previous history of pelvic girdle pain ($p < 0.05$). The study concluded that PGP is a potentially significant health issue during pregnancy. (**Heather pierce et al., 2012)**.

A non-experimental observational cross sectional study was conducted on prevalence of lumbo pelvic pain and pregnancy related pelvic girdle pain in outpatient

department of a tertiary care hospital in New Delhi. Two hundred twenty seven primi gravida mothers participated. Visual analogue scale and clinical assessment was used to measure the pain intensity. Among 227 mothers 137(63.3%) mothers had lumbo pelvic pain, 68(29.9 %) mothers had pregnancy related pelvic girdle pain 69(30.3%) mothers had combined pain. This study concluded high prevalence of pelvic girdle pain in Indian primi gravida mothers. **(Gupta Monika et al., 2014).**

A cross-sectional study was done to investigate the pregnancy related pelvic girdle pain (PGP) and low back pain (LBP) in Iranian women. This study included 325 pregnant mothers, ranging in age from 16 to 42 years. A total of 161 pregnant mothers (49.5%) had reported lumbo pelvic pain at the time of the examination. Based on posterior pelvic pain provocation test, 91 women (28%) had PGP, 43 (13.2%) had LBP, and 27 (8.3%) had both PGP and LBP simultaneously. The intensity of pain in women with lumbo pelvic pain using the visual analogue scale was 5.6 (SD 2.0; r = 2–10).The high prevalence of PGP suggests that this symptom is a significant health problem in Iranian pregnant women, and needs more attention by Iranian health professionals and researchers. **(Mousavi et al 2007).**

A quantitative study was done to determine the pregnancy-related pelvic girdle pain. The main objective was to determine the pelvic girdle pain in pregnant mothers. Five hundred mothers participated in the study. Only 8% of mothers had pelvic girdle pain. After pregnancy, problems were serious in about 7%. Overall, about 45% of all pregnant women and 25% of postpartum women suffered from pelvic girdle pain. These values decrease by about 20% if one excludes mild complaints. Strenuous work, previous low back pain, and previous pregnancy pelvic pain and pregnancy low back pain are risk factors, and the inclusion/exclusion of high-risk subgroups influences prevalence. (**Meijer O G et al., 2004).**

A cross-sectional study was conducted to determine the prevalence of low back pain (LBP), leg pain (LP), and pregnancy pelvic girdle pain (PPGP) in Spanish women to identify the factors associated with a higher risk. Thousand one hundred fifteen mothers participated. Respectively the results was 4-week prevalence of LBP, LP, and PGP was 71.3%, 46.2% and 64.7%. The study concludes that factors associated with a higher risk vary between LBP and PGP. When these variables are taken into account, obstetrical data from current or previous pregnancies and other

variables do not show a significant association with LBP. Stage of pregnancy and depression were associated with PGP. **(Kovacs F M et al., 2012).**

A longitudinal cohort study was conducted in Netherlands. Main objectives were to determine the prevalence, associated delivery-related and psychosocial factors and consequences of self-reported pelvic girdle pain during and after pregnancy. A total of 412 women participated and answered the questionnaires regarding back and pelvic girdle pain, habits, and biomedical, socio demographic and psychosocial factors at 12 and 36 weeks gestation, and 3 and 12 months after delivery. The prevalence of self-reported pelvic girdle pain was at its peak in late pregnancy (7.3%). One out of 7 women suffering from pelvic girdle pain at 36 weeks gestation, and almost half of the women suffering from pelvic girdle pain 3 months after delivery, continued to report symptoms 1 year after delivery. No association was found between obstetric factors and pelvic girdle pain . **(Van Brummen H.J., et al., 2007).**

Literatures related to causes of pelvic girdle pain

A cross sectional cohort study was done to assess the level of evidence for the association between relaxin levels and pregnancy-related pelvic girdle pain (PPGP) during pregnancy. Totally 731 mothers participated. Pain was assessed by using the visual analogue scale and daily functional activity questionnaire. Based on the findings, the level of evidence for the association between PPGP and relaxin levels was found to be low ($p = 0.927$). **(Daniela Aldade et al., 2012).**

A descriptive qualitative study was conducted to assess pregnant women who experience severe pelvic girdle pain in outpatient department, Sweden. The samples selected were mothers who completed 12-29 weeks of gestation. The tool used for the study were visual analogue scale, questionnaires according to European guidelines and clinical tests. The results showed that their pelvic girdle pain started early in pregnancy the mean value was 15 and SD 5.5 and median value was 0.620. The study concludes that the women experienced pelvic girdle pain related to maternal age. **(Helen Elden et al., 2014).**

Literatures related to Risk factors of pelvic girdle pain

An observational prospective cohort study was conducted to investigate the prevalence and incidence of pregnancy related pelvic girdle pain in Netherland. A total of 7526 mothers participated in the study. The tool used was questionnaire with 5 point scale. The results showed that overall 73.4 % mothers reported the pelvic girdle pain. **(Janneke M Bastiaanssen et al., 2005).**

A prospective cohort study was conducted to explore the risk factors for pelvic girdle pain (PGP) during and after pregnancy in Norway. A sample of 326 mothers participated. The main objective was to find the association between socio-demographical, psychological and clinical factors measured in early pregnancy and disability or pain intensity in 30 weeks of gestation. The tool used for the test was questionnaires, visual analogue scale and clinical examination. The results revealed that posterior pelvic pain provocation test and active straight leg raise test were positive in all the mothers $p<0.001$. Study concluded that pelvic girdle pain is severe in late pregnancy. **(Hilde Slendal Robinson et al., 2010).**

A prospective epidemiologic cohort study was done to identify possible risk factors for developing four different syndromes of pelvic girdle pain during pregnancy. Total of 2,269 pregnant mothers participated. The samples selected were mothers who completed 33 weeks of gestation. The tool used for test was functional structured questionnaire and physical examination. The result showed that among 2200 mothers had pelvic girdle pain which was identified through the physical examination and functional activty questionnaire. The study concluded high risk factors were previous delivery, previous low back pain, and trauma of back, previous pelvic surgery, parity and level of stress. **(Godskesen et al., 2006).**

Literatures related to Clinical assessment in pelvic girdle pain

A cross sectional study was conducted to find the association between the lumbo pelvic pain disability and sick leave during pregnancy in Norway. Eight hundred nighty eight mothers participated. The samples selected were mothers between 28-38 weeks of gestation. The tool used for test was assessed by demographic data, questionnaire and visual analogue scale. The study concluded that there is relation between the pelvic girdle pain and sick leave during pregnancy. **(Annelie Gutke et al., 2014).**

A randomised controlled study was conducted to prevent or reduce the incidence or severity of pelvic or back pain and pelvic girdle pain in pregnancy. Total 4093 mothers participated. Mother were assessed by clinical examination. The results showed that 40% of mothers were affected with low back pain and 60% of mothers were affected with pelvic girdle pain. The study concluded that the mothers experienced pain in provocation test and pain during the palpation of symphysis pubis test. **(Victoria Pennick et al., 2012)**.

A randomised controlled study was conducted to provide treatments of pregnancy related pelvic girdle pain and pain after delivery in Netherland. Total of 7526 mothers participated. The tool used for the test was physical examination, standardized clinical test and 7 point scale. The study results showed that73% of mothers were affected in pregnancy related pelvic girdle pain and 35.9% of mothers felt pain after delivery. **(Caroline H.G. Bastiaenen et al., 2004).**

A prospective epidemiological study was conducted to determine the pregnancy related pelvic girdle pain. Total 2269 pregnant mothers participated. Main objective was to determine the pelvic girdle pain in pregnant mothers. Clinical examination was conducted in all mothers. Majority 88% of mothers had pelvic girdle pain. These results showed that standardized clinical examination results in a high degree of sensitivity, specificity and inter-examiner reliability. **(Albert H et al., 2000).**

A cross-sectional study was conducted to determine the posterior pelvic pain in pregnancy (PPPP) among 50 mothers. Main objective was to develop a new diagnostic instrument for mothers with posterior pelvic pain and to assess the validity and reliability of ASLR test. The results showed that relation between the active straight leg raise test and pelvic girdle pain (0.78). The study concluded that active straight leg raise test is a suitable diagnostic instrument to discriminate between patients who are disabled by posterior pelvic pain with pregnancy and healthy subjects. **(Jan M.A et al., 2001).**

Literatures related to functional activities questionnaires in pelvic girdle pain

A randomised control study was conducted in Sweden to find the treatment modalities for pelvic girdle pain in pregnancy. Test used for assessing functional activities of mothers with pelvic girdle pain were clinical test, visual analogue scale, disability pain index and questionnaires. Among 115 mothers 100 of them had pelvic girdle pain. Study results showed that there was no relation of pelvic girdle pain to functional activities of mothers during pregnancy. **(Helen Elden et al., 2008).**

A cohort study was conducted to find pelvic girdle pain during pregnancy in Norway, among 74,973 pregnant mothers between 17 to 30 weeks of gestation. Main objective was to associate age at menarche with presence of pelvic girdle syndrome in pregnancy. Self-administered questionnaire was used to identify the association. Results shows that the prevalence of pelvic girdle syndrome was 20.6% in women with menarche before the age of 11, it was 16.3% in women with menarche at the age of 12 and 12.7% in women with menarche after the age of 14. The study concluded early menarche was associated with increased prevalence of pelvic girdle syndrome in pregnancy and factors associated with early menarche may play a role in the development of pelvic girdle pain. **(Bielland E. K. et al., 2011).**

A cohort study was done to estimate the association of parity with pelvic girdle syndrome in pelvic girdle pain in anterior and bilateral posterior pelvis seventy five thousand nine hundred and thirty nine (75,939) Norwegian pregnant women participated in the study self-administrated questionnaires used to identify the pain level. The study results reveal that at 30 weeks of pregnancy, 15% of the women had developed pelvic girdle pain. Among first-time mothers, 11% of the women reported PGS, compared with 18% of the women with 1 previous delivery and 21% of women with 2 previous deliveries. The odds ratios for PGS of having had 1 or 2 previous deliveries were 1.9 (95% confidence interval CI, 1.9–2.0) and 2.4 (95% CI, 2.3–2.6). For pelvic girdle pain syndrome with severe pain, the corresponding odds ratios were 2.6 (95% CI, 2.3–2.9) and 3.8 (95% CI, 3.3–4.3). Finally the study concludes that the risk of development of pelvic girdle pain syndrome increased with number of previous deliveries, which suggests that parity-related factors play a causal role. **(Elisabeth K. Bjelland., et al.,2010).**

A prospective cross control study was conducted to determine the therapeutic exercise related low back pain and pregnancy pelvic girdle pain. Three thousand two hundred twenty three mothers participated in this study. The tools used for the test was visual analogue scale and clinical examination tests. The study showed that reliability ranging in $p < 0.418$. The mother's experience pelvic girdle pain in provocation test and active straight leg raise test. **(Sklemple Kokical et al., 2012).**

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CHAPTER – III

MATERIALS AND METHODS

Research design is a blue print for conducting a study. Designing a research involves development of a plan strategy that will guide the collection and analysis of the data. The methodology of the study constitutes the research design, tool, and procedure for data collection and techniques for data collection, report of pilot study. The present study was to assess the effect of pelvic girdle pain on functional activities among antenatal mothers.

3.1 Research Approach and Design:

Descriptive survey design was used in this study. A survey is designed to obtain information from antenatal mothers regarding prevalence and risk factors of pelvic girdle pain. The greatest advantage of survey research is its flexibility and broadness of scope. (Polit, 2001)

3.2 Variables of the study:

3.2.1 Dependent Variable: The dependent variable of this study is effect of pelvic girdle pain on functional activities among antenatal mothers.

3.3 Setting of the study:

The study was conducted in antenatal OPD of PSG Hospital, Peelamedu, Coimbatore. The hospital is multi-specialty hospital and research centre with 1,182 beds. PSG Hospital has an outpatient facility where around 180 mothers visit OG OPD every day.

3.4 Population and Sampling:

Convenient sampling was used in this study. All mothers who are between 20-36 weeks of gestation and who met the inclusion criteria were selected. Total number of antenatal mothers attending the OPD during past one year (2014-2015) was 3569.

3.4.1 Criteria for sample selection:

3.4.1.1 Inclusion criteria:

- Antenatal mothers between 20 to 36 weeks of gestation

3.4.1.2 Exclusion Criteria:

- Antenatal mothers having placenta preavia, abruptio placenta.
- Antenatal mothers with history of neoplasm, spinal surgery, osteoporosis.

3.5 Instruments and tool for data collection:

With the review of literature a standard tool was selected. Both interview, observation and clinical assessment methods were used in collecting the data. (Annexure IV)

Section A: Demographic and obstetrical data.

Section B: Clinical Examination to Determine To Pelvic Girdle Pain. (European Guidelines Vleeming).

Section C: Pelvic Girdle Pain Questionnaire. (Stuge B 2008)

Section D: Visual Analogue Scale for Pelvic Girdle Pain.

Section A: Demographic and obstetrical data.

Demographic data of antenatal mothers includes the age, education, income, age at menarche, low back pain, history of drug in take, height weight and BMI and general condition. (Annexure IV)

Base line data regarding obstetrical history includes weeks of gestation, obstetrical score, number of living children, history of previous abortion, mode of delivery and history of disease during pregnancy. (Annexure IV)

Section B: **Clinical Examination tool.**

The clinical examination tool consist of 6 test to assess for pelvic girdle pain. Each test has several steps. If they elicit pain for more than 2 they are positive for pelvic girdle pain. The tests are active straight leg raise test, provocation test, distraction test, compression test, Patrick-Faber test and palpation of symphysis pubis test. (Annexure IV)

Section C: **Pelvic Girdle Pain Questionnaire.**

The pelvic girdle pain questionnaire is a standardized tool developed by Stuge B. in 2008. Is used to assess the level of functional activity. Functional activities were

assessed to what extent it is problematic to carry out the functional activities. Questionnaire had been divided into 3 sections. (Annexure IV)

Section 1: Consist of 20 items to know how much problematic is pelvic girdle pain during performance of daily activities. Based on the response it has been scored as not at all (0), to a small extent (1), to some extent (2) and to large extent (3).

Section 2: Consist of two questions to observe the severity of pain in day time and evening. The response has been scored as, not at all (0), to a small extent (1), to some extent (2) and to large extent (3).

Section 3: Consist of 3 questions to observe the extent of this pelvic girdle pain. The response has been scored as, not at all (0), to a small extent (1), to some extent (2) and to large extent (3).

Scoring and Interpretation

- Score 1-25 mild decrease in functional activity.
- Score 26-50 moderate decrease in functional activity.
- Score 51- 75 severe decrease in functional activity.

Section D: **Visual Analogue Scale for Pelvic Girdle Pain.**

Visual analogue scale is a standardized scale. Scoring starts form 0-10. Visual analouge scale is used to identify the degree of pain level 0- no pain, 3-mild pain, 6 – moderate pain and 10- severe pain. (Annexure IV)

Scoring and interpretation:

- 0 – no pain.
- 1-3- mild pain.
- 4-6 – moderate pain.
- 7-10- severe pain

3.5.1 Validity and Reliability of the Tool:

Validity of the study has been determined by expert's opinion from the different fields along with, objectives of the study. The experts were requested to give their opinion, clarity, and appropriateness, suggestion, for the modification of the tool.

Reliability of the tool was identified using split half method after pilot study. It was computed using Karl's Pearson's correlation method. The reliability of tool was found to be 0.75. The tool was found to be reliable.

3.5.2 Data collection procedure:

Ethical clearance from the Institutional Human Ethics Committee of PSG IMSR was obtained to conduct the study. A written permission letter was obtained from the Medical Director and HOD of OBG department of the PSG hospital Coimbatore to conduct the study. Samples who met the inclusion and exclusion criteria were selected by using convenient sampling for the study. After selecting the samples, data was collected through questionnaire and assess the clinical examination with pelvic girdle pain among the antenatal mothers.

Steps in data collection:

1. Obtained permission from the IHEC.
2. Obtained informed consent from antenatal mothers.
3. Screened mothers for pelvic girdle pain using clinical tests.
4. Assessed the all the 6 clinical examination tests to the samples out of 6, the two clinical examination tests was elicited positive, then the researcher concluded that particular antenatal mothers have pelvic girdle pain positive.
5. Demographic data, obstetrical history, level of functional activity and level of pain assessed by using questionnaire among antenatal mother with pelvic girdle pain.
6. Assessed the pelvic girdle pain level by using visual analogue scale simultaneously.
7. Provide pamphlet regarding pelvic girdle pain.

3.6 Report of the pilot study:

Pilot study was conducted from 8.9.14 to 13.9.14 to test the practicability and feasibility of conducting the study in Antenatal OPD of PSG hospitals. Twenty samples were selected according to the inclusion criteria. They were clinically examined for pelvic girdle pain and how it affects their daily functional activities was assessed. Karl person correlation coefficient test was used to find the relationship between pelvic girdle pain and functional activity among antenatal mothers. Pilot study showed a negative correlation between pelvic girdle pain and the level of functional activities at r = 0.266, that there is no significant relationship between the pelvic girdle pain and functional activities among the antenatal mothers. Out of 47 mothers who fulfill the inclusion criteria, 100 mothers demonstrated positive for more than 2 clinical examination for pelvic girdle pain. This study showed that 42.5% of prevalence of pelvic girdle pain among antenatal mothers attending OPD of PSG Hospital.

3.6.1 Changes Brought After Pilot Study:

Changes incorporated in the study after the pilot study presentation was to distribute include self – instructional pamphlet regarding pelvic girdle pain.

3.7 Data Analysis Plan:

The data collected through various methods will be compiled by adopting appropriate statistical techniques and inferences. Frequency and percentage will be used for describing demographic variables and obstetrical variables. Karl Pearson's co-efficient of correlation will be calculated to find out the relation between the pelvic girdle pain and functional activity among antenatal mothers. Chi square test will be used to find out the association between the demographic and obstetrical variables and level of functional activities with pelvic girdle pain among antenatal mothers. Chi square is planned find out the association between the demographic and obstetrical variables and with pelvic girdle pain among antenatal mothers.

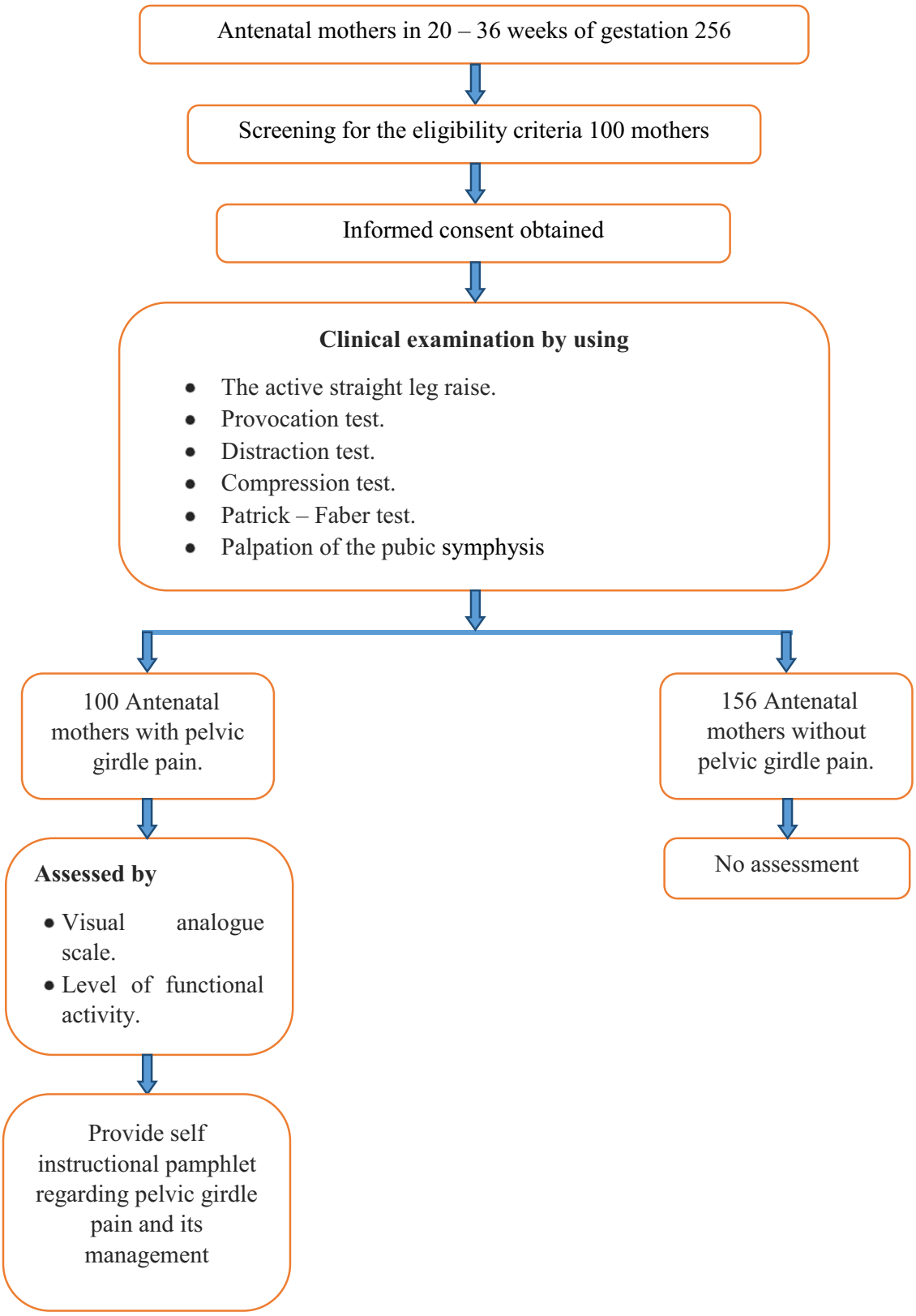

Figure 3.2 Schematic representation of research process

CHAPTER IV

DATA ANALYSIS AND INTERPERTATION

Data analysis is a systemic organization including the synthesis of research data and the testing of hypothesis using those data. Interpretation is the process of making sense of result and examining their implication (Polit and Beck, 2008). Data analysis is the process which is essential to reduce, organise and give meaning to data to address the research purpose, questions and hypothesis.

In this study data was collected from antenatal mothers between 20- 36 weeks of gestation. Pelvic girdle pain was assessed by using clinical examination, daily functional activity questionnaire and visual analogue scale. The data was compiled, analysed and then tested for their significance through statistical analysis.

The analysis in the chapter includes:

Sections:

I. Prevalence of pelvic girdle pain among antenatal mothers.
II. Demographic and obstetrical variables of antenatal mother.
III. Identification of risk factors of pelvic girdle pain among antenatal mothers.
IV. Assessment of pelvic girdle pain using visual analogue scale among antenatal mothers with pelvic girdle pain.
V. Assessment of extent of problem in performing functional activity among antenatal mothers with pelvic girdle pain.
VI. Correlation between pelvic girdle pain and functional activity among the antenatal mothers.
VII. Association between pelvic girdle pain of antenatal mothers with selected demographic and obstetrical variables.
VIII. Association between level of pain among antenatal mothers with their selected demographic and obstetrical variables.

SECTION I: Prevalence of pelvic girdle pain among antenatal mothers.

TABLE 4.1 Pelvic girdle pain as elicited through various clinical examination among antenatal mothers.

n = 256

S.NO	Clinical examination	Pain Elicited		Pain Not Elicited	
		f	%	f	%
1	The active straight leg raise	78	30	178	70
2	P4 test	86	34	170	66
3	Distraction Test	25	10	231	90
4	Compression Test	40	16	216	84
5	Patrick - Faber Test	81	32	175	68
6	Palpation of pubis symphysis.	45	18	211	82

Table 4.1 shows out of 256 mothers, 78(30%) mothers had pain in active straight test, 86(34%) mothers had pain in p4 test, 25(10%) mothers had pain in distraction test, 40(16%) mothers had pain in compression test, 81(32%) mothers had pain in Patrick – Faber test and 45(18%) mothers had pain on palpation of pubis symphysis.

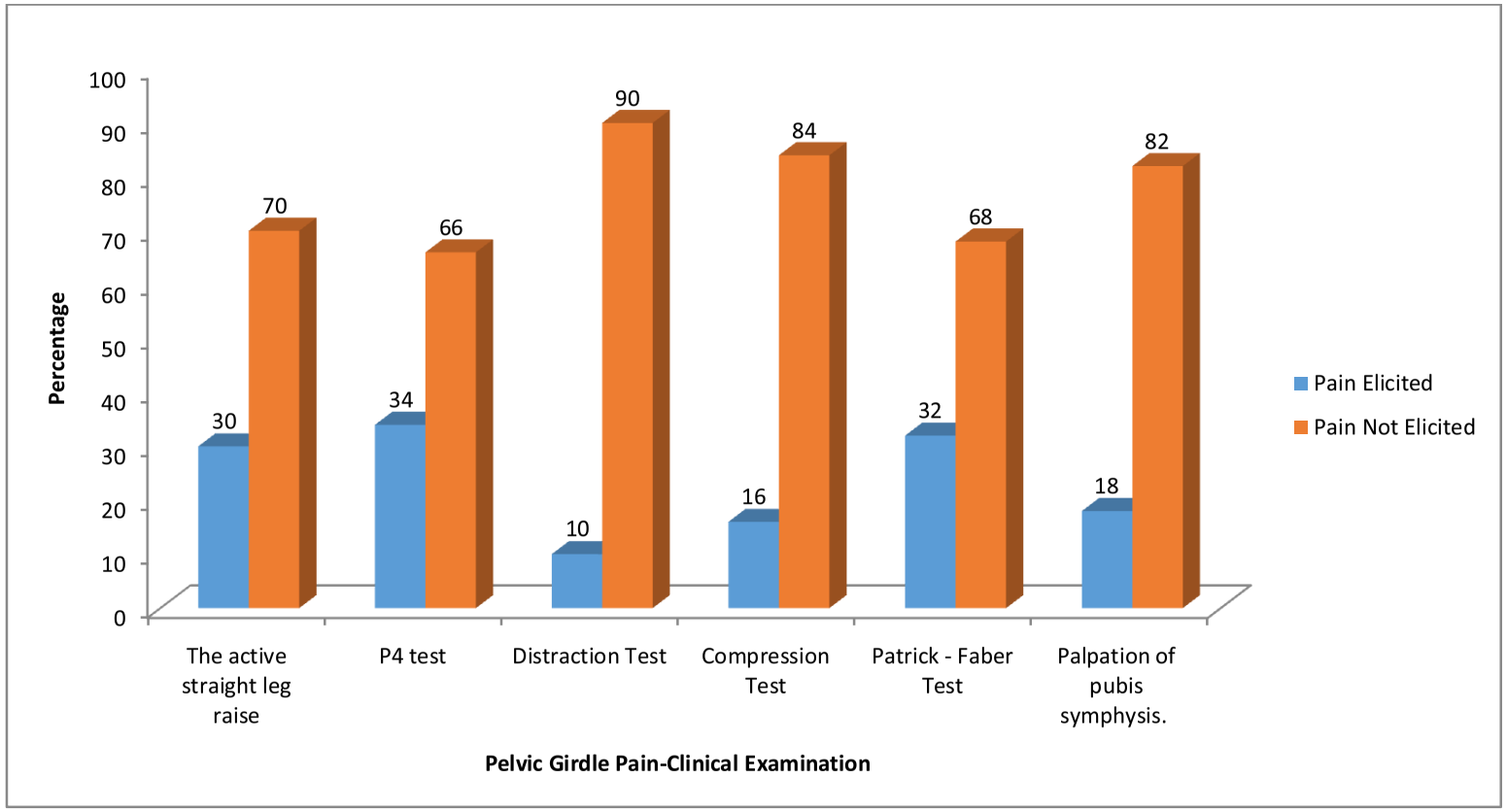

FIGURE 4.3 Bar diagram showing the percentage distribution Pelvic Girdle Pain as Elicited through Various Clinical Examination among Antenatal Mothers

Table 4.2 Prevalence of pelvic girdle pain among antenatal mothers.

S.No	Pelvic girdle pain	f	%
1.	Elicited for greater than 2 test	100	39%
2.	Not elicited	156	61%

Out of 256 mothers who fulfilled the inclusion criteria, 100 mothers demonstrated positive for more than 2 clinical examination for pelvic girdle pain. Findings revels that 39% of prevalence of pelvic girdle pain among antenatal mothers attending OPD of PSG Hospital.

SECTION II: Demographic and obstetrical variables of antenatal mother

TABLE 4.3 Frequency and percentage distribution of demographic variables of antenatal mothers

n = 100

S. No	Demographic variables	f	%
1.	**Age**		
	20-25 yrs.	65	65
	26- 30 yrs.	27	27
	31- 35 yrs.	7	7
	36- 40 yrs.	1	1
2.	**Education**		
	Higher secondary	50	50
	Graduate	50	50
3.	**Age at menarche**		
	12- 14yrs	35	35
	15- 17yrs	65	65
4.	**Height**		
	155- 165 cm	58	58
	166- 175 cm	42	42
5.	**BMI**		
	18.5 – 24. 9 (normal)	68	68
	25.0 – 29.9 (over weight)	28	28
	Above 35 (obese)	4	4
6.	**General condition**		
	Pedal edema		
	Present	33	33
	Absent	67	67
	Posture – lumbar lordosis		
	Present	0	0
	Not present	100	100
	Gait		
	Steady	100	100
	Unsteady	0	0

Frequency and percentage distribution of antenatal mothers according to demographic variables had been shown in table 4.3. Nearly 65(65%) of antenatal mothers were in age group of 20-25 yrs. Among 100 mothers, almost 65(65%) mothers attained menarche at the age group of 15- 17 yrs. Among 100 mothers, 68(68%) mothers had a normal BMI of 18.5 to 24.9, 28(28%) mothers were over weight with a BMI of 25.0 to 29.9 and only 4(4%) mother were under the obese category.

TABLE 4.4 Frequency and percentage distribution of obstetrical variables of antenatal mothers

n = 100

S. No	Obstetrical data	F	%
1.	**Weeks of gestation**		
	20 – 26 weeks	97	97
	27- 31 weeks	2	2
	31-36 weeks	1	1
2.	**Obstetrical score**		
	Gravida		
	1	53	53
	2	37	37
	3	10	10
	Para		
	1	35	35
	2	1	1
	Live birth		
	1	34	34
	2	2	2

Majority 97(97%) of antenatal mothers were in 20-26 weeks of gestation. Obstetrical score shows that 53(53%) mothers were gravida 1 and 35(35%) mothers were gravida 2. (Table 4.4)

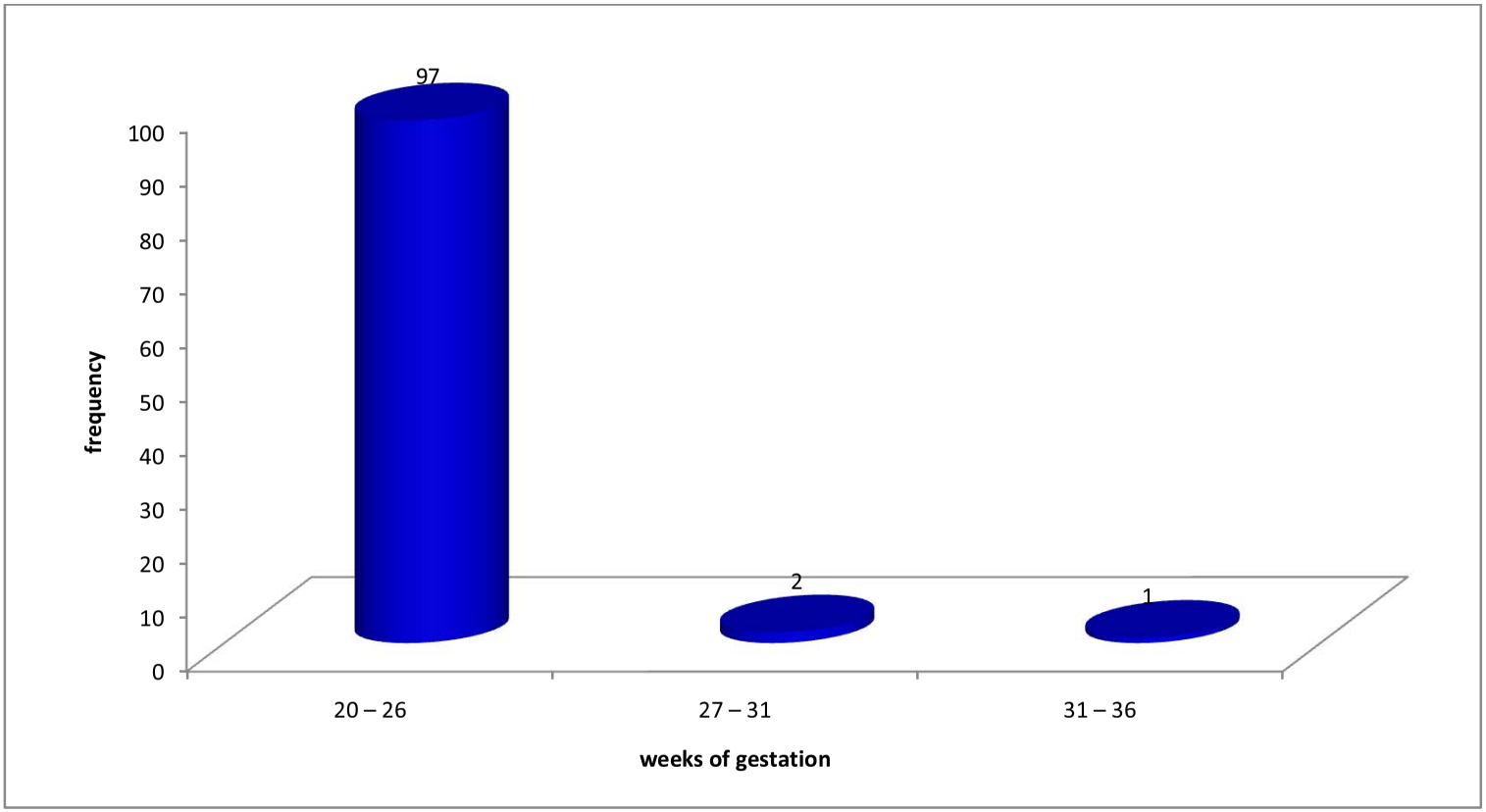

FIGURE 4.4 Bar diagram showing the percentage distribution of weeks of gestation among the antenatal mothers

TABLE 4. 5 Frequency And Percentage Distribution of Previous History of Antenatal Mothers

n= 100

S.No	Past obstetrical history	f	%
1.	**Number of living children**		
	1	35	35
2.	**History of previous abortion**		
	Yes		
	Spontaneous abortion	6	6
	Missed abortion	9	9
	Complete abortion	4	4
	Spontaneous and missed abortion	1	1
	No	80	80
3.	**Mode of delivery**		
	Normal vaginal delivery	20	20
	LSCS	15	15
4.	**History of present pregnancy status**		
	Normal	84	84
	High risk		
	PIH	5	5
	GDM	5	5
	Hypothyroidism	6	6
5.	**Previous history of back pain**		
	Yes	14	14
	No	86	86
6.	**History of drug intake**		
	Yes	7	7
	No	93	93

Table 4.5 shows among the 100 mothers, majority 80 (80%) mothers had no history of previous abortion and 6 (6%) mothers had history of spontaneous abortion, 9(9%) mothers had history of missed abortion, 4(4%) mothers had history of complete abortion and only one (1%) mother had 2 abortion like 1sptonateous abortion and 1 missed abortion.

One fourth of mothers 20 (20%) mothers had normal vaginal delivery. Among 100 mothers almost 84 (84%) mothers were normal, 16 (16%) were high risk mothers of that 5(5%) mothers had PIH, 5(5%) mothers had GDM on diet and 6(6%) mothers had hypothyroidism.

Regarding previous history of back pain, among 100 mothers, majority 86(86%) mothers did not have previous history of back pain and only 14(14%) mothers had history of back pain in previous pregnancy.

SECTION III: Identification of risk factors of pelvic girdle pain among antenatal mothers

Table 4.6 Assessment of risk factors of pelvic girdle pain among antenatal mothers

n = 100

S. No	Risk factors	f	%
1	**Age at menarche**		
	Below 12 years	0	0
	12 – 17 years	100	100
	Above 17 years	0	0
2	**BMI**		
	18.5 – 24.9	68	68
	25.0 – 29.9	28	28
	Above 35	4	4
3	**Weeks of Gestation**		
	20-26 wks.	97	97
	27-31 wks.	2	2
	31-36 wks.	1	1
4	**Previous mode of delivery**		
	NVD	20	20
	LSCS	15	15
5	**Number of previous delivery**		
	1	35	35
	2	1	1
6	**History of previous back pain**		
	Yes	14	14
	No	86	86

Table 4. 6 shows that all mothers selected for this study had no risk regarding age at menarache. Regarding BMI only 4% of mothers were obese and were at risk for pelvic girdle pain. Regarding weeks of gestation only 1% of mothers risk with 31-36 weeks of gestation and 2% of risk was associated with 27-31 weeks of gestation. Regarding previous mode of delivery both NVD and LSCS (20+15) 35% were at risk for pelvic girdle pain. Regarding number of previous delivery 1% had risk of getting pelvic girdle pain parity 2 and gravida 3. Regarding history of previous back pain 14% were at risk for pelvic girdle pain.

SECTION IV: Assessment of pelvic girdle pain using visual analogue scale among antenatal mothers with pelvic girdle pain.

TABLE 4.7 Frequency and percentage distribution of pain level using visual analogue scale among antenatal mothers with pelvic girdle pain

n = 100

S. No	Level of pain	Score	Frequency	Percentage (%)
1	No pain	0	0	0
2	Mild	1-3	31	31
3	Moderate	4-6	56	56
4	Severe	7-10	13	13

Table 4.7 shows half of the mother 56% had moderate pain and 13% had severe pelvic girdle pain.

SECTION V: Assessment of extent of problem in performing functional activity among antenatal mothers with pelvic girdle pain

TABLE 4. 8 Assessment of extent of problem in performing functional activity among antenatal mothers with pelvic girdle pain

n=100

S. No	How problematic is it for you because of your pelvic girdle pain to	Extent of problem in performing functional activity among antenatal mothers with pelvic girdle pain							
		Not at all (0)		To a small extent (1)		To some extent (2)		To a large extent (3)	
		f	%	f	%	f	%	f	%
1.	Dress yourself	59	59	29	29	12	12	0	0
2.	Stand for less than 10 minutes	47	47	31	31	22	22	0	0
3.	Stand for more than 60 minutes	19	19	30	30	32	32	19	19
4.	Bend down	35	35	38	38	23	23	4	4
5.	Sit for less than 10 minutes	37	37	36	36	21	21	6	6
6.	Sit for more than 60 minutes	16	16	35	35	35	35	14	14
7.	Walk for less than 10 minutes	39	39	37	37	20	20	4	4
8.	Walk for more than 60 minutes	18	18	32	32	33	33	17	17
9.	Climb stairs	23	23	44	44	24	24	9	9
10.	Do housework	17	17	47	47	30	30	6	6
11	Carry light objects	21	21	48	48	30	30	1	1
12.	Carry heavy objects	20	20	29	29	30	30	21	21
13.	Get up / sit up	14	14	35	35	37	37	14	14
14.	Push a shopping cart	17	17	24	24	30	30	29	29
15.	Run	6	6	22	22	28	28	44	44
16.	Carry out sporting activities	6	6	25	25	24	24	45	45
17.	Lie down	10	10	29	29	34	34	27	27
18.	Roll over the bed	7	7	31	31	33	33	29	29
19.	Have a normal sex life	9	9	21	21	22	22	48	48
20.	Push something with one foot	12	12	30	30	29	29	29	29
21.	In the morning	16	16	50	50	33	33	1	1
22.	In the evening	13	13	35	35	42	42	10	10
23.	Has your leg / have your legs given way?	15	15	32	32	42	42	11	11
24.	Do you do things slowly	16	16	35	35	36	36	13	13
25.	Is your sleep interrupted	14	14	28	28	41	41	17	17

Among 100 mothers, most of 59 (59%) mothers experienced no pain while dressing, 50 (50%) mothers had pain to a small extent in morning, 41(41%) mothers had interrupted sleep to some extent, 48(48%) mothers had pain during normal sex life, 38 (38%) mothers had difficult to bend down to a small extent and 48 (48%) mothers had difficulty in carrying light objects. (Table 4.8)

TABLE 4.9 Assessment of level of functional activity of antenatal mothers with pelvic girdle pain

n=100

S. No	Level of decrease in functional activities of antenatal mothers with pelvic girdle pain	Score	Frequency	Percentage (%)
1	Mildly decreased	1-25	33	33
2	Moderately decreased	26-50	49	49
3	Severely decreased	51-75	18	18

As shown in table 4.9 49% of mothers had moderate decrease in functional activities and 18% of mothers had severe decrease in functional activities.

Among 18% mothers who had severely decreased functional activities, 9 of them had high intensity pain as identified through visual analogue scale.

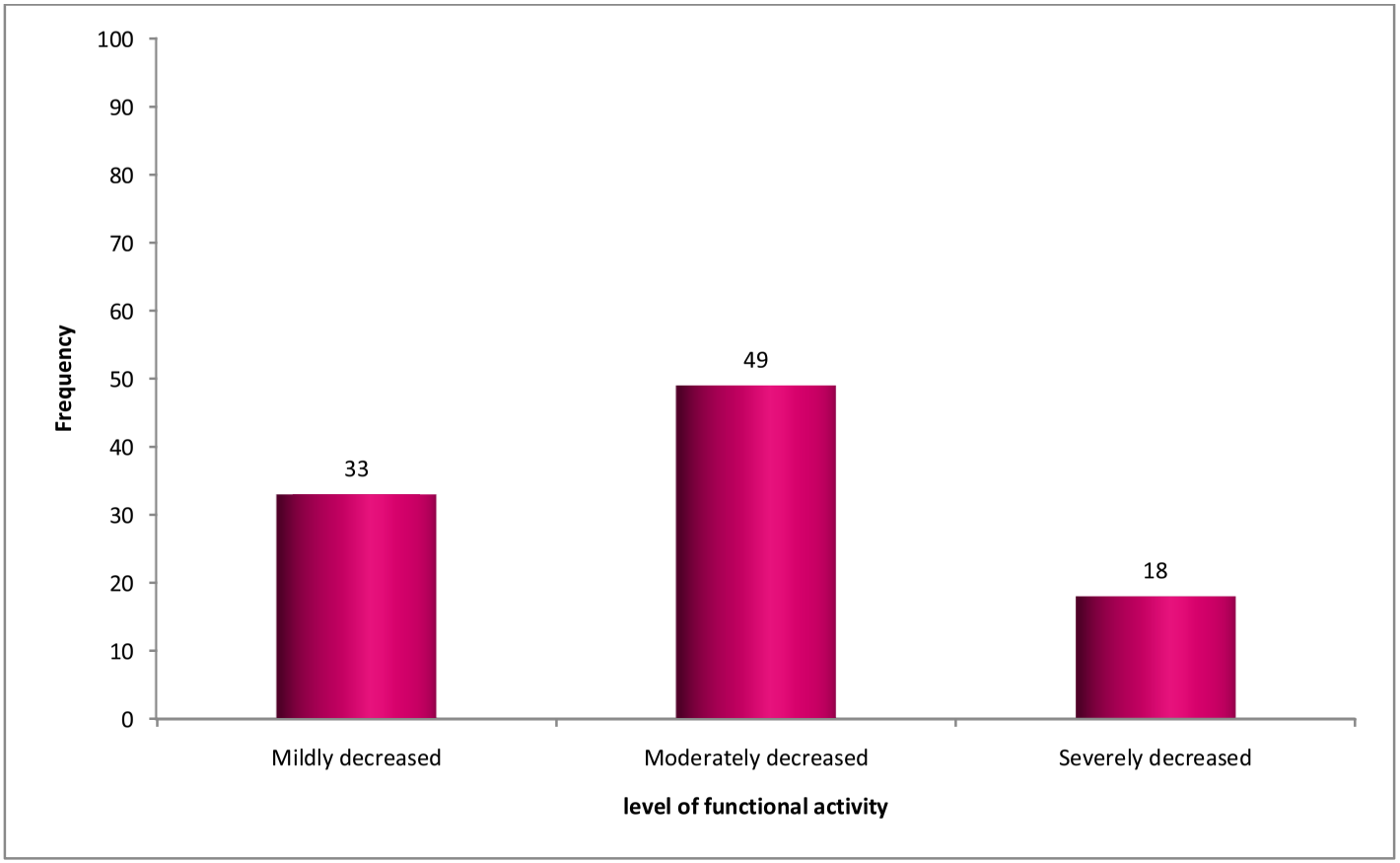

FIGURE 4. 5 Bar diagram showing the percentage distribution of level of functional activity among the antenatal mothers with pelvic girdle pain

SECTION VI: Correlation between pelvic girdle pain and functional activity among the antenatal mothers.

TABLE 4. 10 Correlation between pelvic girdle pain and functional activity among the antenatal mothers

n=100

Variables	Mean value	S.D	' r ' value
Pelvic girdle pain	4.39	1.75	r = 0.615
Level of functional activities	34.90	15.60	

Karl Pearson correlation coefficient test was used to find the relationship between pelvic girdle pain and functional activity among antenatal mothers.

Table 4.10 shows that score for pelvic girdle pain was 4.39 ± 1.75 and the mean score of functional activity was 34.90 ± 15.60. Karl Pearson's correlation coefficient was calculated and 'r' value of 0.615 shows a positive correlation between pelvic girdle pain and level of functional activities was found to be statistically significant at $p<0.01$ level. This clearly shows that when the pelvic girdle pain increases the problems in the functional activity of antenatal mothers increases. Antenatal mother with more pelvic girdle pain have difficulty in performing functional activities.

SECTION VII: Association between pelvic girdle pain of antenatal mothers with selected demographic and obstetrical variables.

TABLE 4.11: Association between pelvic girdle pain of antenatal mothers with selected demographic and obstetrical variables

n = 100

Demographic Variables	Mild Problem (1 – 25)		Moderate Problem (26 – 50)		Severe Problem (51 – 75)		d.f	Calculated value χ^2	Tabulated value
	f	%	f	%	f	%			
Age at menarche									
12- 14 yrs	15	15	15	15	5	5	2	2.413	5.99
15 - 17yrs	18	18	34	34	13	13			(NS)
Mode of delivery									
NVD	6	6	11	11	3	3	2	2.082	9.49
LSCS	7	7	5	5	3	3			(NS)
History of disease during pregnancy									
High risk mothers	3	3	7	7	6	6	2	5.303	5.99
No	30	30	42	42	12	12			(NS)
History of previous back pain.									
Back pain during first pregnancy	3	3	6	6	5	5	2	3.624	5.99 (NS)
No	30	30	43	43	13	13			
Weight									
51 - 60 kg	18	18	20	20	5	5			
61 - 70 kg	11	11	19	19	11	11	4	5.529	9.49
71 - 80 kg	4	4	10	10	2	2			(NS)
Height									
155 - 165 cm	18	18	26	26	14	14	2	3.543	5.99
165 - 175 cm	15	15	23	23	4	4			(NS)

NS – Not Significant.

Chi square was used to find out the association between level of functional activity of antenatal mothers with selected demographic and obstetrical variables.

Table 4.11 revealed that there was no significant association between level of functional activities and selected demographic variables and obstetrical variable like age at menarche, mode of delivery, disease during pregnancy, previous back pain, weight and height.

SECTION VIII: Association between level of pain among antenatal mothers with their selected demographic and obstetrical variables.

TABLE 4.12: Association between level of pain among antenatal mothers with their selected demographic and obstetrical data

n = 100

Demographic and obstetrical Variables	Mild pain (1 – 3)		Moderate Pain (4 – 50)		Severe Pain (7-10)		d.f	Calculated value χ^2	Tabulated value
	f	%	f	%	f	%			
Age at menarche									
12 - 14 yrs	14	14	17	17	4	4	2	2.040	5.99
15 - 17yrs	17	17	39	39	9	9			(NS)
Mode of delivery									
NVD	8	8	8	8	4	4	4	5. 535	9.49
LSCS	7	7	7	7	1	1			(NS)
History of disease during pregnancy									
High risk mothers	3	3	9	9	4	4	2	3.032	5.99
No	28	28	47	47	9	9			(NS)
History of previous back pain									
Back pain during first pregnancy	4	4	6	6	4	4	2	3.569	5.99
No	27	27	50	50	9	9			(NS)
Weight									
51- 60 kg	14	14	25	25	4	4			
61 - 70 kg	12	12	22	22	7	7	4	1.128	9.49
71 - 80 kg	5	5	9	9	2	2			(NS)
Height									
155 - 165 cm	19	19	28	28	11	11	2	5..389	5.99
165 - 175 cm	12	12	28	28	2	2			(NS)

NS – Not Significant.

Chi square test was used to find out the association between level of pain intensity of antenatal mothers with selected demographic and obstetrical variables.

Table 4.12 revealed that there was no significant association between level of pelvic girdle pain and selected demographic and obstetrical variable like age at menarche, mode of delivery, disease during pregnancy, previous back pain, weight and height.

CHAPTER V

RESULTS AND DISCUSSION

This chapter presents a detailed discussion based on the major objectives, corresponding findings and observation during the conduct of the study. This study was conducted to assess the effect of pelvic girdle pain on functional activities among antenatal mothers. This study finding is compared with the findings and observation of similar studies.

Report of the incidence of pelvic girdle pain has varied over the years but it estimated that around 50% mothers are affected with pelvic girdle pain which affects their functional activities.

5.1 Prevalence of pelvic girdle pain among antenatal mothers.

5.1.1 Assessment of pelvic girdle pain as elicited through various clinical examination among antenatal mothers.

Among 256 mothers screened, 86 (34%) mother experienced pelvic girdle pain in provocation test and 81(32%) mothers in Patrick – Faber test.

A similar study conducted by Andry Vleeming (2008) showed that pain elicited in provocation test, Patrick- Faber test, Gaenslen's test and palpation of pubis symphysis were effective clinical tests among antenatal mothers to find pelvic girdle pain.

In this present study out of 256 mothers who fulfilled inclusion criteria between 20 – 36 weeks of gestation, 100 mothers demonstrated positive for more than 2 clinical examination of pelvic girdle pain. This study showed 39% of prevalence of pelvic girdle pain among antenatal mothers.

A similar study on prevalence of lumbo pelvic pain and pregnancy related pelvic girdle pain among antenatal mothers in New Delhi showed that among 227 mothers 137(63.3%) mothers had lumbo pelvic pain, 68(29.9%) mothers had pregnancy related pelvic girdle pain and 69(30.3%) mothers had combined pain. (Gupta Monika et al., 2014)

5.2 Demographic and obstetrical variables of antenatal mothers.

5.2.1 Age of the antenatal mothers:

The present study shows that among 100 mothers, majority mothers 65% were in age group of 21-25yrs, 27% mothers were in age group of 26-30 yrs. Seven mothers were in age group of 31-35yrs and 1% mother in age group 36 -40yrs.

5.2.2 Obstetrical data of antenatal mothers:

In this study majority 97% of antenatal mothers were in 20 – 26 weeks of gestation. Regarding obstetrical score 53% mother were gravida 1, 37% mothers were gravida 2 and only 3% mothers were in gravida 3.

A cohort study conducted in Norway contradicted that the risk of development of pelvic girdle syndrome increased with number of previous delivery. In that study among first time mothers 11% of women reported pelvic girdle syndrome, compared with 18% of the women with 1 previous delivery and 21% of women with 2 previous deliveries. (Elisbeth K. Bjelland, 2010).

5. 3 Identification of risk factors of pelvic girdle pain among antenatal mother

5.3.1 BMI of the antenatal mothers:

Sixty eight mothers had a normal BMI of 18.5 to 24.9, 28 mothers were overweight with a BMI of 25.0 to 29.9 and remaining 4 mother fall in obese category.

5.3.2 Age at Menarche:

In this study, 65% of mothers attained menarche between the age of 15- 17yrs. A study to find the pelvic girdle pain during pregnancy states that 20.6% women attained menarche before the age of 11yrs and 16.3% women attained menarche at the age of 12yrs. They concluded that early menarche was associated with increased prevalence of pelvic girdle pain syndrome during pregnancy. (Biellard E. K. et al., 2007)

5.3.2 Previous history of back pain:

In the present study regarding previous history of back pain, among 100 mothers, 14% mothers had previous history of back pain. This finding has been

supported by a cross control study which was conducted to determine the prevalence of low back pain, leg pain and pelvic girdle pain. The result showed that main factors associated with low back pain were related to low back pain in previous pregnancy. (Francisco et al., 2010).

5.4 Assessment of pelvic girdle pain using visual analogue scale among antenatal mothers with pelvic girdle pain.

In this present study pain assessed through visual analouge scale, 56% of mothers had moderate pain 31% mothers had mild pain and only 13% mothers had severe pelvic girdle pain. A study conducted to identify the prevalence of pregnancy related pelvic girdle pain in primi gravida identifies visual analogue scale as an effective tool in assessing level of lumbo pelvic pain and pelvic girdle pain 5.5± 0.7 (Gupta Monika et al., 2014).

5.5 Assessment of extent of performing functional activity among antenatal mothers with pelvic girdle pain.

In this study, 59 % mothers experienced no pain in while dressing, 50 % mothers had pain to a small extent in morning, 41% mothers had interrupted sleep to some extent, 48 % mothers had pain during normal sex, 38 % mothers were having difficulty to bend down to a small extent and 48% mothers had difficulty in carrying light objects**.**

A similar study conducted by Gen McGlashan (2010) showed that certain activities like pushing a shopping trolley, running, prolonged walking, standing on one leg to get dressed, mopping and carrying a toddler were found to be aggravate the pelvic girdle pain among the antenatal mothers.

5.6 Correlation between pelvic girdle pain and functional activity among antenatal mothers.

In this study, the statistical analysis shows a positive correlation between pelvic girdle pain and level of functional activities. The result was strongly supported by another study which reveals that there was association between pain and daily functional activities in antenatal mothers. (Daniela Airdate., 2012)

5.7 Association between pelvic girdle pain of antenatal mother with selected demographic and obstetrical variables.

There was no association between selected demographic and obstetrical variables such as age at menarche, mode of delivery, disease during pregnancy, previous back pain, height and weight and level of functional activity among antenatal mother with pelvic girdle pain.

This was contradicted with clinical practice guidelines developed by Vleeming. The guidelines explains that there is a relationship between demographic and obstetrical data like parity, previous mode of delivery, previous low back pain and the activities like standing, walking, sitting and work load with pelvic girdle pain.(Vleeming 2008).

5.8 Association between level of pain among antenatal mother with selected demographic and obstetrical variables.

There was no association between selected demographic and obstetrical variables such as age at menarche, mode of delivery, disease during pregnancy, previous of back pain, height and weight and level of pain intensity among antenatal mother with pelvic girdle pain.

This study was also supported with a longitudinal cohort study conducted in Netherland. Seven women suffering from pelvic girdle pain at 30 weeks of gestation continued to report symptoms one year after delivery and no association was found between obstetrical variables and pelvic girdle pain. (Van Brummen H. J., et al., 2007)

CHAPTER VI

SUMMARY AND CONCLUSION

The study was conducted to assess the effect of pelvic girdle pain on functional activities among antenatal mothers attending, OPD of PSG hospital, Coimbatore.

Research design was descriptive survey design. The prevalence study was conducted in PSG Hospital, Coimbatore. Two hundred fifty six mothers were assessed for pelvic girdle pain.

Validity and reliability of the tool was tested through pilot study. Clinical test and questionnaire technique was used to obtain information on demographic and obstetric data. The tool consists of 4 sections, section A demographic and obstetric data, section B clinical examination test, section C functional activities questionnaire and section D visual analogue scale.

The data collected was tabulated in frequency distribution. The distribution pattern was depicted through appropriate graphic methods. Karl Pearson's coefficient correlation was used to verify the influence the level of functional activities and clinical examination of pelvic girdle pain.

6.1 MAJOR FINDINGS OF THE STUDY:

- Of the 256 mothers screened, 86 (34%) of mothers had pain in provocation test and 81 (32%) mothers had pain in Patrick – Faber test.
- The prevalence of pelvic girdle pain was found to be 39% among antenatal mothers attending OPD of PSG Hospital.
- Nearly 65% of the antenatal mothers belong to 20- 25 years of age group.
- About 65% of antenatal mothers attained menarche within 15 – 17 years.
- Majority 97% of antenatal mothers were in 20 – 26 weeks of gestation.
- Fifty three mothers were in primi mothers.
- Thirty one mothers had moderate level of pain, majority (56%) of mothers had mild pain and only (13%) mothers had severe pelvic girdle pain.
- Upto 33% mothers had moderate level of pain and 49% mother had mild and 18% mothers had severe level of pain while performing functional activities

- There was correlation between pelvic girdle pain and effect of functional activity among antenatal mothers (r= 0.615).
- There was no association between the demographic and obstetrical variables and level of functional activities.
- The study showed that there was no association between the demographic and obstetrical variables and level of pelvic girdle pain.

6.2 Conclusion:

The study showed that prevalence of pelvic girdle pain among antenatal mothers was 39%. There is correlation between the pelvic girdle pain and the effect of functional activities. The study also showed that there was no association between the level of pelvic girdle pain and selected demographic and obstetrical variables.

6.3 NURSING IMPLICATION:

6.3.1 Nursing Service:

- Nurses have a key role in providing adequate information regarding pelvic girdle pain among antenatal mothers.
- Nurses can use various non-pharmacological measures to increase comfort among antenatal mothers with pelvic girdle pain.

6.3.2 Nursing Education:

- In service education and continuing education programme can be conducted regarding pelvic girdle pain exercises to improve knowledge among nurses.
- Incorporate pelvic girdle pain in nursing curriculum to improve the knowledge among student nurses.

6.3.3 Nursing Research:

- More research can be done on various non-pharmacological measures to reduce the pelvic girdle pain among antenatal mothers.

6.3.4 Nursing Administration:

- Nurse Managers can motivate the nurses to make and provide pamphlets regarding pelvic girdle pain and its management to antenatal mothers.

- Nurse administrators can educate the nurses regarding newer trends in non-pharmacological measure to reduce the pelvic girdle pain among antenatal mothers.

6.4 LIMITATIONS OF THE STUDY:

- Majority of the study participants were between 20-26 weeks of gestation.
- Antenatal mothers of 30- 36 weeks of gestation were not willing to undergo clinical examination.

6.5 RECOMMENDATION FOR FURTHER STUDY:

- A comparative study can be conducted to assess the pelvic girdle pain among antenatal and postnatal mothers.
- A prospective study to see the prognosis of pelvic girdle pain during postnatal period can be done.

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ANNEXURE-I

PERMISSION LETTER

10:6:14

Coimbatore

From ,

S.Geeth priya

I[st] year M.Sc Nursing

PSG college of Nursing

Coimbatore.

To ,

Dr. Vimal Kumar Govindan

Medical Director,

PSG Hospital

Ccoimbatore.

Respected sir

I Geeth priya of I [st] year M.Sc Nursing student is conducting a research study on " Assess The Effect of Pelvic Girdle Pain On Functional Activities Among The Antenatal Mothers Attending OPD " which is my part of my requirement.I kindly request to you to grant me the permission to conduct the study in Antenatal Mothers (20-36 wks of gestation) attending the OPD. Kindly do the needful.

Thanking you

Yours sincerely

For Ethics approval.

S.Geeth priya.

Date: 16/14
Coimbatore

From ,

S.Geeth priya
I st year M.Sc Nursing
PSG college of Nursing
Coimbatore.

To ,

Prof. Dr. Seetha Paniker,D.G.O,MD,DNB..,
HOD of Obstetrics and Gynaecology
PSG Hospital
Ccoimbatore.

Respected mam

I Geeth priya of I st year M.Sc Nursing student is conducting a research study on " Assess The Effect of Pelvic Girdle Pain On Functional Activities Among The Antenatal Mothers Attending OPD " which is my part of my requirement.I kindly request to you to grant me the permission to conduct the study in Antenatal Mothers (20-36 wks of gestation) attending the OPD. Kindly do the needful.

Thanking you

Yours sincerely

S.GEETH PRIYA

permitted
Include advice regarding pain relief measures

ANNEXURE-II

PSG Institute of Medical Sciences & Research
Institutional Human Ethics Committee
Recognized by The Strategic Initiative for Developing Capacity in Ethical Review (SIDCER)
POST BOX NO. 1674, PEELAMEDU, COIMBATORE 641 004, TAMIL NADU, INDIA
Phone : 91 422 - 2598822, 2570170, Fax : 91 422 - 2594400, Email : ihec@psgimsr.ac.in

July 4, 2014

To
Ms S Geeth Priya
I M Sc Nursing
PSG College of Nursing
Coimbatore

Ref.: Proposal titled: *"A study to assess the effect of pelvic girdle pain on functional activities among the antenatal mothers attending OPD of PSG Hospitals, Coimbatore"*

Sub.: Ethics Committee Approval for the study

The Institutional Human Ethics Committee, PSG IMS & R, Coimbatore -4, has reviewed your proposal on 24th June, 2014 in its full board review meeting held at Research Conference Hall, PSG IMS&R, between 2.00 pm and 4.45 pm, and discussed your application to conduct the study entitled:

"A study to assess the effect of pelvic girdle pain on functional activities among the antenatal mothers attending OPD of PSG Hospitals, Coimbatore"

The following documents were received for review:

1. Duly filled application form
2. Proposal
3. Informed Consent forms
4. Data Collection Tool
5. Permission letter from concerned Heads of Department
6. CV
7. Budget

The members who attended the meeting at which your study proposal was discussed are as follows:

Sl. No.	Name of the Member of IHEC	Qualification	Area of Expertise	Gender	Affiliation to the Institution Yes/No	Present at the meeting Yes/No
1	Dr. S. Bhuvaneshwari (Member-Secretary, IHEC)	MD	Clinical Pharmacology	Female	Yes	Yes
2	Mrs. Geetha S Kannan	+ 2	Lay person	Female	No	Yes
3	Mr Gowpathy Velappan	BA., BL	Legal Advisor	Male	No	Yes
4	Mrs G Malarvizhi	M Sc	Nursing	Female	Yes	Yes
5	Mr. R. Nandakumar (Vice-Chairperson, IHEC)	BA., BL	Legal Expert	Male	No	Yes
6	Dr. G. Rajendiran	DM	Clinician (Cardiology)	Male	Yes	No
7	Dr. V. Ramamurthy	Ph D	Biotechnology	Male	Yes	No

PSG Institute of Medical Sciences & Research
Institutional Human Ethics Committee

Recognized by The Strategic Initiative for Developing Capacity in Ethical Review (SIDCER)
POST BOX NO. 1674, PEELAMEDU, COIMBATORE 641 004, TAMIL NADU, INDIA
Phone : 91 422 - 2598822, 2570170, Fax : 91 422 - 2594400, Email : ihec@psgimsr.ac.in

8	Dr. M. Ramanathan	M Pharm, Ph D	Non-Medical (Pharmacy)	Male	Yes	Yes
9	Dr. P. Sathyan (Chairperson, IHEC)	DO, DNB	Clinician (Opthalmology)	Male	No	Yes
10	Dr. Seetha Panicker	MD	Clinician (Obstetrics & Gyanaecology)	Female	Yes	Yes
11	Dr. S. Shanthakumari	MD	Pathology, Ethicist	Female	Yes	Yes
12	Dr. Y.S. Sivan	Ph D	Social Scientist (Sociology)	Male	Yes	Yes
13	Dr. Sudha Ramalingam (Alternate Member-Secretary, IHEC)	MD	Public Health, Epidemiology, Genetics, Ethicist	Female	Yes	Yes
14	Mrs. K. Uma Maheswari	M Sc, M Phil. B Ed	Botany	Female	No	No
15	Dr. D. Vijaya	M Sc, Ph D	Basic Medical Sciences (Biochemistry)	Female	Yes	Yes

After due consideration, the committee has decided to approve the above proposal.

The approval is valid for one year.

We request you to intimate the date of initiation of the study to IHEC, PSG IMS&R and also, after completion of the project, please submit completion report to IHEC.

We hereby confirm that neither you nor any of your study team members have participated in the voting/ decision making procedure of the committee. The members of the committee who have participated in the voting/ decision making procedure of the committee do not have any conflict of interest in the referenced study.

This Ethics Committee is organized and operates according to Good Clinical Practice and Schedule Y requirements.

Non-adherence to the Standard Operating Procedures (SOP) of the Institutional Human Ethics Committee (IHEC) and national and international ethical guidelines shall result in withdrawal of approval (suspension or termination of the study). SOP will be revised from time to time and revisions are applicable prospectively to ongoing studies approved prior to such revisions.

PIs are required to send progress reports (in the form of an extended abstract with publications if any) to the IHEC every six months (and a month before expiry of approval date, if renewal of approval is being sought).

Request for renewal must be made at least a month ahead of the expiry of validity along with a copy of the progress report.

SECRETARY
PSG IMS&R
COIMBATORE-641004.

Dr S Bhuvaneshwari
Member - Secretary
Institutional Human Ethics Committee

ANNEXURE-III

INFORMED CONSENT

I am Geeth Priya of PSG College of Nursing is carrying out a study titled **"A study to assess the effect of pelvic girdle pain on functional activities among antenatal mothers attending OPD of PSG Hospital, Coimbatore "**

In this study I am going to assess the effect of pelvic girdle pain on functional activities among antenatal mothers by using clinical examination test and questionnaire and provide Self-instructional pamphlet regarding the pelvic girdle pain exercise. If you is not willing in participation in this study, you have right to withdraw from study at any time. You will not be paid any remuneration for time spent for the study. The information provided by antenatal mothers will be kept in strict confidence. Under no circumstances I shall reveal the identity of respondent. The information that I collect would be used for approved research purpose only.

CONSENT : The above information regarding the study, has been rend by me has been explained to me by the investigator from PSG College of Nursing. Having understood the same, I hereby give my consent to participate in study. I am affix my signature to indicate my consent and willingness that I will co-operate n study.

Name of the Researcher: S. Geeth Priya

Signature of the Researcher:

Signature of the Participant:

IHEC phone no: 0422 2570170 Extn : 5818

Researcher phone no: 9566470390

ஒப்புதல் படிவம்

தேதி :

கீத் பிரியா, ஆகிய நான், பி. எஸ். ஜி. மருத்துவக் கல்லூரியின், மகப்பேறு மருத்துவ துறையின் கீழ், **"பி. எஸ். ஜி. மருத்துவமனையின் வெளிநோயாளிகள் பிரிவிற்கு வரும் தாய்மார்கள் இடுப்பு வளைவு வலியை மதிப்பிடுதல்"** என்ற தலைப்பில் ஆய்வு மேற்கொள்ள உள்ளேன்.

என் ஆய்வு வழிகாட்டி: பேராசிரியை. பேபி

ஆய்வு மேற்கொள்வதற்கான அடிப்படை:

- கர்ப்பகால தாய்மார்கள் மத்தியில் இடுப்பு வளைய வலியை மதிப்பிடல்

ஆய்வின் நோக்கம்:

- இடுப்பு வளைவு வலி ஏற்பட்ட தாய்மார்களின் எண்ணிக்கையை மதிப்பிடல்.
- கர்ப்பகால தாய்மார்கள் மத்தியில் இடுப்பு வளைய வலி ஆபத்து காரணிகள் மதிப்பீடு.

ஆய்வில் பங்கு பெறும் நபர்களின் எண்ணிக்கை: 30

ஆய்வு மேற்கொள்ளும் இடம்: பி. எஸ். ஜி. மருத்துவமனை, கோயம்புத்தூர்.

ஆய்வின் பலன்கள்:

தாய்மார்களின் இடுப்பு வளைவு வலியை மதிப்பிடல்.

ஆய்வினால் ஏற்படும் அசௌகரியங்கள் / பக்க விளைவுகள்: பக்க விளைவுகள் எதுவும் இல்லை.

இந்த ஆய்வில் கிடைக்கும் தகவல்கள் 4 வருடங்கள் பாதுகாக்கப்படும். இவை வேறு எந்த ஆய்விற்கும் பயன்படுத்தப்பட மாட்டாது. எந்த நிலையிலும் உங்களைப் பற்றிய தகவல்கள் யாருக்கும் தெரிவிக்கப்படமாட்டாது. அவை இரகசியமாக வைக்கப்படும்.

எந்த நேரத்தில் வேண்டுமானாலும் ஆய்விலிருந்து விலகிக்கொள்ளும் உரிமை உங்களுக்கு உண்டு. ஆய்விலிருந்து விலகிக்கொள்வதால் உங்களுக்கு அளிக்கப்படும் சிகிச்சையில் எந்த வித மாற்றமும் இருக்காது.

இந்த ஆராய்ச்சிக்காக உங்களிடம் சில கேள்விகள் கேட்கப்படும்.

மேலும், இந்த ஆய்வில் பங்கு கொள்வது உங்கள் சொந்த விருப்பம். இதில் எந்த விதக் கட்டாயமும் இல்லை. நீங்கள் விருப்பப் பட்டால், இந்த ஆய்வின் முடிவுகள் உங்களுக்குத் தெரியப் படுத்தப்படும்.

ஆய்வாளரின் கையொப்பம் :

தேதி :

ஆய்வுக்குட்படுபவரின் ஒப்புதல்:

நான் இந்த ஆராய்ச்சியின் நோக்கம் மற்றும் அதன் பயன்பாட்டினைப் பற்றி தெளிவாகவும், விளக்கமாகவும் தெரியப்படுத்தப் பட்டுள்ளேன். இந்த ஆராய்ச்சியில் பங்கு கொள்ளவும், இந்த ஆராய்ச்சியின் மருத்துவ ரீதியான குறிப்புகளை வரும் காலத்திலும் உபயோகப்படுத்திக் கொள்ளவும் முழு மனதுடன் சம்மதிக்கிறேன்.

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ANNEXURE-IV

TOOL ASSESSMENT FOR PELVIC GIRDLE PAIN

SECTION – A: DEMOGRAPHIC DATA:

1. Sample no :

2. Age :

3. Education :

4. Income of the family :

5. Age at menarche :

6. LMP : EDD :

7. Obstetrical score G P L A

8. weeks of gestation :

9. Height :

10. Weight :

11. BMI :

12. Past obstetrical history

Number of living children	History of previous abortion	History of previous pregnancy	History of present pregnancy

13. Any history of disease during pregnancy Yes / No :

14. Do you have previous history of low back pain Yes / No :

15. Do you have any history of taking of drug Yes / No :

16. General condition

Pedal odema :

Scar :

Posture :

Gait :

SECTION –B: CLINICAL EXAMINATION TO DETERMINE TO PELVIC GIRDLE PAIN

S/No	Assessment test for pelvic girdle pain	Pain elicited	Pain not elicited
1.	**The active straight leg raise** • Place the mother in supine position straight legs and feet about 20cm apart. • Instruct the mother to lift the each legs separately above 20cm. • Pain felt in sacroiliac joint		
2.	**P4 test** • Place the mother in supine position. • The hip and knee on the tested side were flexed to 90 degree. • flexes the knee into the pelvic along the longitudinal axis of the femur. • The pain is felt in posterior part of pelvis.		
3.	**Distraction test** • Place the mother in supine position. • Apply cross – armed pressure to anterior superior iliac spines. • Pain is felt in the anterior part of the pelvis. • Pain is felt in the posterior part of the pelvis.		
4.	**Compression test** • Place the mother in side lying position . knee and hips flexed. • Apply the pressure vertically into the pelvis. • Pain is felt in posterior sacroiliac joint ligament and anterior part of the sacroiliac joints.		

5.	**Patrick- faber test** • Place the mother in supine position. • Led the ipsilateral leg into flexion , abduction and external rotation so that the heel rested on the opposite kneecap. • Stabilize the contralateral side of the pelvic to ensure that the lower back stayed in a neutral position . • The mother kneecap lowerd against the bench apply a light overpressure to the subjects knees. • The pain is felt in both anterior sacroiliac ligament and hip joint were stressed (both the sides were tested separately)		
6.	**Palpation of the pubic symphysis** • Place the mother in supine position. • Apply gentle pressure to the pubic with her hand (flat fingers) If the pressure caused pain that persisted more than 5 sec after removal of the hand it is recorded as pain.		

SECTION –C: FUNCTIONAL ACTIVITY QUESTIONNAIRE

To what extent do you find it problematic to carry out the activities listed below because of pelvic girdle pain.

TABLE-1

S. No	How problematic is it for you because of your pelvic girdle pain to:	Not at all (0)	To a small extent (1)	To some extent (2)	To a large extent (3)
1.	Dress yourself				
2.	Stand for less than 10 minutes				
3.	Stand for more than 60 minutes				
4.	Bend down				
5.	Sit for less than 10 minutes				
6.	Sit for more than 60 minutes				
7.	Walk for less than 10 minutes				
8.	Walk for more than 60 minutes				
9.	Climb stairs				
10.	Do housework				
11.	Carry light objects				
12.	Carry heavy objects				
13.	Get up / sit down				
14.	Push a shapping cart				
15.	Run				
16.	Carry out sporting activities				
17.	Lie down				
18.	Roll over in bed				
19.	Have a normal sex life				
20.	Push something with one foot				

TABLE -2

S. No	How much pain do you experience	Not at all (0)	To a small extent (1)	To some extent (2)	To a large (3)
21.	In the morning				
22.	In the evening				

TABLE -3

S. No	To what extent because of pelvic girdle pain	Not at all (0)	To a small extent (1)	To some extent (2)	To a large extent (3)
23.	Has your leg /have your legs given way?				
24.	Do you do things more slowly?				
25.	Is your sleep interrupted?				

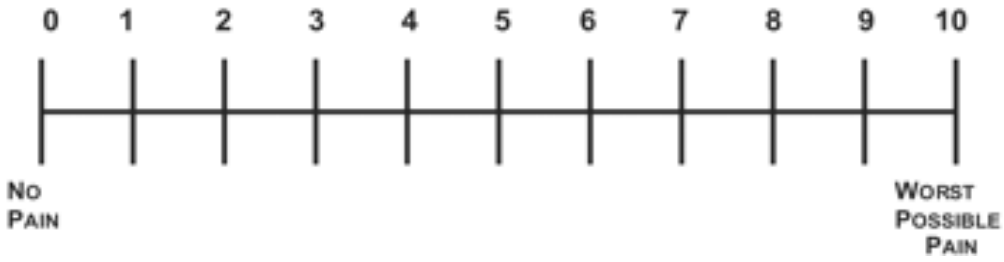
Scoring procedure:

Mild -1 -25

Moderate -26-50

Severe – 51- 75

SECTION –D VISUAL ANALOGUE SCALE FOR PELIVC GIRDLE PAIN



SCORING

0 : no pain

1-3 : mild pain

4-6 : moderate pain

7-10 : severe or worst pain

ANNEXURE-V

பகுதி-இ

இடுப்பு வளைய வலி எந்த அளவிற்கு கீழ்கண்ட செயல்களைச் செய்ய சிரமமாக உள்ளது என்பதை (✓)குறிப்பிடவும்.

வ. எண்	இடுப்பு வளைய வலி இருப்பதால் ஏதேனும் உங்களுக்கு பாதிப்பு உள்ளதா?	ஒரு போதும் இல்லவே இல்லை (0)	சிறிய அளவிற்கு பாதிக்கிறது (1)	ஓரளவுக்கு பாதிக்கிறது (2)	பெரிய அளவிற்கு பாதிக்கிறது (3)
1.	உடை மாற்றிக் கொள்வதில் சிரமம் உள்ளதா?				
2.	உங்களால் சிரமம் இல்லாமல் பத்து நிமிடங்கள் நிற்க முடிகிறதா?				
3.	உங்களால் சிரமம் இல்லாமல் 60 நிமிடத்திற்கு மேல் நிற்க முடிகிறதா?				
4.	சிரமம் இல்லாமல் குனிய முடிகிறதா?				
5.	உங்களால் சிரமம் இல்லாமல் 10 நிமிடங்கள் உட்கார முடிகிறதா?				
6.	உங்களால் சிரமம் இல்லாமல் 60 நிமிடத்திற்கு மேல் உட்கார முடிகிறதா?				
7.	உங்களால் சிரமம் இல்லாமல் 10 நிமிடங்கள் நடக்க முடிகிறதா?				
8.	உங்களால் சிரமம் இல்லாமல் 60 நிமிடத்திற்கு மேல் நடக்க முடிகிறதா?				
9.	சிரமமின்றி உங்களால் படி ஏற முடிகிறதா?				
10.	வீட்டு வேலை செய்வதில் ஏதேனும் சிரமம் உள்ளதா?				
11.	சிரமம் இன்றி உங்களால் குறைந்த எடை உள்ள பொருட்களை எடுக்க முடிகிறதா?				

12.	சிரமம் இன்றி உங்களால் அதிக எடை உள்ள பொருட்களை எடுக்க முடிகிறதா?				
13.	சிரமம் இன்றி உங்களால் எழுந்து உட்கார முடிகிறதா?				
14.	பொருட்கள் வைத்து தள்ளும் வண்டியை தள்ளுவதில் ஏதேனும் சிரமம் உள்ளதா?				
15.	ஓடுவதில் ஏதேனும் சிரமம் உள்ளதா?				
16.	சிரமம் இன்றி உங்களால் விளையாட முடிகிறதா?				
17.	சிரமம் இன்றி உங்களால் படுக்க முடிகிறதா?				
18.	சிரமம் இன்றி உங்களால் திரும்பி படுக்க முடிகிறதா?				
19.	உடல் உறவு வைப்பதில் ஏதேனும் சிரமம் உள்ளதா?				
20.	சிரமம் இன்றி ஒரு பொருளை காலால் தள்ள முடிகிறத?				
21.	காலை பொழுதில் எவ்வளவு வலியை உணருகிறீர்கள்?				
22.	மாலை பொழுதில் எவ்வளவு வலியை உணருகிறீர்கள்				
23.	இடுப்பு வளைய வலி இருப்பதால் கால்களில் தளார்ச்சி ஏற்படுகிறதா?				
24.	இடுப்பு வளைய வலி இருப்பதால் நீங்கள் நிதானமாக வேளை செய்கிறீர்களா?				
25.	இடுப்பு வளைய வலி இருப்பதால் தூக்கம் களைகிறதா?				

INTRODUCTION :

During pregnancy ,hormonal changes help to soften and stretch ligaments and tissues in the women, particularly around the joints of the pelvis . This is a normal process that assists childbirth and does not usually cause lasting discomfort.

It is thought that around half of all pregnant women experience some degree of pain in the lower back and pelvic area during pregnancy. This is called pelvic girdle pain. This is due to softened ligaments , as well as changes in the women's posture and centre of gravity , as baby grows . These changes put extra stress on the muscles and ligaments of the back , stomach , pelvic floor , hips as well as the pelvic girdle.

pelvic girdle pain (PGP) is a condition where pain is experienced in the joints , muscles or ligaments of the pelvis during pregnancy and after pregnancy.

CAUSES:

Pregnancy hormone relaxin and progesterone soften the ligaments causing joints to become increasingly mobile and leads to lack of stability in pelvic girdle joints.

As the tummy muscles stretch throughout pregnancy and weight of the baby increases in the pelvic floor muscles ,it is harder for the muscles to tighten and support the pelvic joints and this too can contribute to poor control of pelvic joints movement and increased pain .

A previous fall or accident that caused damage to the pelvis

Occasionaly the position of baby may produce symptoms related to pelvic girdle pain .

RISK FACTORS :

A history of previous low back pain and pelvic girdle pain.

Lax ligaments /weak abdominal muscle tone.

A hard physical job / workload, strenuous work with twisting and bending at work.

More than one pregnancy

Pelvic girdle pain in previous pregnancy .

Increased body weight and BMI .

Increased maternal age .

Increased number of pregnancies .

Previous injury to pelvis .

SYMPTOMS :

- ❖ Pain at the back of the pelvis .
- ❖ Pain on or around the pubic bone at the front .
- ❖ Difficulty in walking .
- ❖ Pain felt when standing on one leg (eg) getting dressed , climbing stairs and getting in and out of the bath.
- ❖ Difficulty in household works .
- ❖ Difficulty in bending down .
- ❖ Pain and /or difficulty in moving the legs apart (eg)getting in and out of the car.
- ❖ Difficulty lying in some position (eg) on the back or side.
- ❖ Difficulty in starting to walk after sleep.

DO'S

- ✓ Rest more frequently.
- ✓ Ask for and accept help from others , involving partner and family members.
- ✓ Wear flat slippers and supportive shoes.
- ✓ Sit down to do things that you would normally stand (eg) getting dressed and ironing .
- ✓ While sleeping in bed . place the pillows between the legs.
- ✓ Turn over with your knees together while turning in the bed.
- ✓ To get into a good sitting position (use a cushion / pillows support over the back of your chairs) .

DONT'S :

- ✓ Avoid activities that require standing on a single leg , unevenly loading your pelvic joints or overloading your pelvic joints like :
  - Prolonged walking ,
  - Walking on uneven or soft ground (eg) soft sand and bush tracks)
  - Pushing a shopping trolley,
  - Standing on one leg to get dressed ,
  - doing heavy workload in home like wet washing clothes ,vacuuming and carrying shopping bags
  - crossing over the legs .
  - Don't lifting heavy weights .
  - carrying heavy objects in one hand.

EXERCISES FOR PELVIC GIRDLE PAIN :

PELVIC TILT EXERCISE

- lie on your back with pillows supported with your knees bent .
- place one hand in abdomen and one hand at back .
- inhale and exhale , flatten the back . part against the floor so that there is no space between the back and floor .
- hold the position for 5-6 seconds and relax and repeat this exercise 10 times.

KEGELS EXERCISE :

- Empty your bladder and lie on your back with your knees's bent in flat surface and place the rolled towel in between the extremities.
- Close and draw up around the anal passage as though preventing a bowel action . then repeat front passage (vagina and urethra) as it stop the flow of urine in mid stream the contraction should be held for 10 seconds.
- Then bring back to the normal position .

HIP BRIDGE EXERCISE :

- Lie on your back with your knee's bent in flat surface .
- Try to push down into the floor with hands and raise the hips .
- Hold for 3 seconds and relax.

ABDOMIAL BREATHING EXERCISE

- Sit in upright position .place your hand on the lower part of your tummy .
- Breathe in through your nose.
- Gently draw in your tummy muscles as you breathe out , and relax
- Repeat up to 10 times .

SQAUT EXERCISE :

- Start by starting with your feet approximately shoulder width aspect . and help with chair or partner .
- Squat down as low as you can keep your feet flat on the ground if possible .
- Press your knees apart with your elbows .
- Hold for a few minutes or even longer if you are comfortable in that position.

STRECTING EXERCISE :

- sit comfortably with legs stretch your hands in the same line of your hands in the same line of your legs .
- Then make your one leg hanging down from the exercise table .
- Using firm cloth around your leg and stretch the legs towards.

NOTE :

If pain is severe consult the obstetrician .

PSG COLLEGE OF NURSING

COIMBATORE

PELVIC GIRDLE PAIN

இடுப்பு வளைய வலி

கர்ப்பகாலத்தில் ஏற்படும் ஹார்மோன்களின் மாற்றங்கள் பெண்களின் உடம்பில் உள்ள தசைநார்கள், தசைகள் மற்றும் இடுப்பைச் சுற்றியுள்ள மூட்டுகளை மென்மையாக்கவும் விரிவடையவும் உதவுகின்றன. இது கர்ப்பகாலத்தில் ஏற்படும் சாதாரணமான நிகழ்வாகும். இந்த நிகழ்வு குழந்தைப் பிறப்பிற்கு உதவுவது மட்டுமல்லாமல் அசௌகரியத்தையும் ஏற்படுத்தும்.

கர்ப்பமான பெண்களில் 50 சதவிகித பெண்கள் முதுகின் கீழ்பகுதி மற்றும் இடுப்புப்பகுதிகளில் வலி போன்ற உணர்வை அனுபவிக்கிறார்கள். இதைத்தான் இடுப்பு வளைய வலி என்கிறோம்.

பெண்களின் உடலமைப்பு மாறுபடுவதாலும், தசைகள் விரிவடைந்து மென்மையாவதாலும், சிசுவின் வளர்ச்சி காரணமாகவும் பெண்கள் இந்த வலியை உணர்கிறார்கள். இந்த மாற்றங்கள் உடம்பிலுள்ள முதுகு, வயிற்றுப்பகுதி, இடுப்பு, இடுப்பின் கீழ்ப்பகுதி மற்றும் இடுப்பு வலையத்தில் உள்ள தசைநார்களிலும், தசைகளிலும் மிகுந்த அழுத்தத்தை ஏற்படசெய்கிறது.

இடுப்பு வளைய வலி என்பது கர்ப்பகாலத்தின்போதும், அதற்கு பின்பும் இடுப்பு மூட்டுகள், தசைகள் மற்றும் தசைநார்களில் ஏற்படும் வலியாகும்.

காரணங்கள்

- கர்ப்பகாலத்தில் சுரக்கப்படும் ரிலாக்ஸின் மற்றும் புரோஜெஸ்ட்டிரோன் ஹார்மோன்களால் தசைகள் மென்மையாவதால் மூட்டுகள் அதிகமாக நகர்கின்றன. இதனால் இடுப்பு வளைய மூட்டுகளின் நிலை பலவீனமடைகிறது.
- கர்ப்பகாலத்தில் அடிவயிற்று தசைகள் விரிவடைவதாலும் மற்றும் சிசுவின் எடை அதிகரிப்பதாலும் எலும்பின் கீழ்த்தசைகள் எடையை தாங்க சிரமம் ஏற்படுகிறது. இதுவே இடுப்பு வளைய மூட்டுகளின் வலியை ஏற்படுத்துகிறது.
- ஏதேனும் விபத்தில் இடுப்பு எலும்பு பாதிக்கப்பட்டிருந்தால் இந்த வலி ஏற்படவோ அல்லது அதிகரிக்கவோ வாய்ப்புள்ளது.
- கர்ப்பகாலத்தில் சிசுவின் நிலை காரணமாகவும் இடுப்பு வளைய வலி ஏற்படக்கூடும்.

இடுப்பு வளைய வலி அதிகரிக்கும் காரணிகள்

- கர்ப்பகாலத்திற்கு முன்பே இடுப்பு வலி மற்றும் இடுப்பு வளைய வலி உடையவர்கள்.
- பலவீனமான மற்றும் தளர்வான அடிவயிற்றின் தசைகள்.
- அதிக அல்லது பளுவான வேலை.
- ஒன்றிற்கு மேற்பட்ட பிரசவங்கள்.
- முந்தைய கர்ப்பகாலத்தின்போது இடுப்பு வளைய வலி ஏற்பட்டிருந்தால்.
- அதிக உடல் எடை பருமன்.
- உடலிலுள்ள மற்ற மூட்டுகளின் அதிகமான அசைவுகள்.
- 30க்கு மேற்பட்ட வயதில் கருவுருதல்.
- கர்ப்பகாலத்திற்கு முன்பே இடுப்பு எலும்பில் காயம் அல்லது முறிவு ஏற்பட்டிருந்தால்.

அறிகுறிகள்

- இடுப்பின் பின்புறம் வலி ஏற்படுதல்.
- இடுப்பை சுற்றியுள்ள தசைகளில் வலி ஏற்படுதல்.
- நடப்பதில் சிரமம்.
- உடை மாற்றும் போதும், படி ஏறும் போதும், ஒற்றை காலில் நிற்கும் பொழுதும் இடுப்பில் வலி ஏற்படுதல்.
- வீட்டு வேலை செய்வதில் சிரமம்.
- குனிவதில் சிரமம்.
- வாகனத்தில் இருந்து கீழே இறங்கும் பொழுதும், ஏறும் பொழுதும் கால்களை விரித்து இறங்குவதில் சிரமம் மற்றும் வலி ஏற்படுதல்.
- ஒரே நிலையில் படுப்பதற்கு சிரமம் ஏற்படுதல்.
- படுக்கையில் இருந்து எழும்போது நடப்பதற்கு சிரமம் ஏற்படுதல்.

கர்ப்பகாலத்தில் செய்ய வேண்டியவை

- ✓ போதிய ஓய்வு.
- ✓ வீட்டு வேலைக்கு குடும்பத்தாரின் உதவியை பெற்றுக்கொள்ளுதல்.
- ✓ தட்டையான காலணிகள் அணிதல்.
- ✓ கூடுமானவரை நின்று கொண்டு செய்யும் வேலைகளை தவிர்த்தல்.
- ✓ உறங்கும் பொழுது பக்கவாட்டில் படுத்துக்கொண்டு கால்களுக்கு இடையே தலையணையை வைத்துக்கொள்ளுதல்.
- ✓ புரண்டு படுக்கும் போது இரண்டு கால்களையும் சேர்த்து வைத்து திரும்ப வெண்டும்.
- ✓ அமரும் பொழுது தலையணை ஆதரவுடன் அமர வேண்டும்.

கர்ப்பகாலத்தில் தவிர்க்க வேண்டிய செயல்பாடுகள்

- ❖ அதிக நேர நடைபயணம்.
- ❖ மேடு பள்ளங்களில் நடப்பதை தவிர்க்க வேண்டும்.
- ❖ அதிக எடை உள்ள பொருட்களை தள்ளவோ அல்லது இழுக்கவோ கூடாது.
- ❖ ஒரு காலில் நின்று உடை மாற்றுவது.
- ❖ அதிகமான சுமை கொடுக்கும் வேலைகளாகிய துவைத்தல், வீடு துடைத்தல், அதிக பளு சுமத்தல் போன்றவற்றை தவிர்க்க வேண்டும்.
- ❖ கால்மேல் கால் போட்டு அமர கூடாது.
- ❖ அதிகமான எடையுள்ள பொருட்களை ஒரு கையில் எடுப்பதை தவிர்க்க வேண்டும்.

இடுப்பு வளைய வலியை குறைக்கும் உடற்பயிற்சிகள்;

இடுப்பு பயிற்சி:

- ❖ தலையணை உதவியின் மூலம் நேராக படுத்துக்கொண்டு முழங்காலை மடக்கி பாதம் தரையில் படும்படி படுத்திருக்க வேண்டும்.
- ❖ ஒரு கையை வயிற்றின் மேலும் மற்றொரு கையை இடுப்பின் பின்புறம் வைத்திருக்க வேண்டும்.
- ❖ தங்களது முதுகிற்கும் தரைக்கும் நடுவில் எந்தவொரு இடைவெளியும் இல்லாதவாறு வைத்துக்கொள்ளவும்.

- ❖ மூச்சைப் பத்து நொடிகள் உள்ளிழுத்து அதன் பின்னர் மெதுவாக வெளியே விடவும்.

கீகல் பயிற்சி

- சிறுநீரை வெளியேற்றிவிட்டு பயிற்சியை தொடங்க வேண்டும்.
- நேராக படுத்துக்கொண்டு முழங்காலை மடக்கி பாதம் தரையில் படுமாறு படுத்துக்கொண்டு இரு கால்களுக்கு இடையே தலையணையை வைத்திருக்க வேண்டும்.
- இடுப்பின் கீழ்ப்பகுதியிலுள்ள சிறுநீர்த்தசைகளையும் மலம் கழிக்கும் தசைகளையும் நன்றாக 5-6 நொடிகள் இறுக்கிப் பிடித்துக்கொண்டு சமநிலையில் இருக்க வேண்டும்.

ஹிப் பிரிட்ஜிங் பயிற்சி:

- நேராக படுத்துக் கொண்டு முழங்காலை மடக்கி பாதம் தரையில் படுமாறு படுக்க வேண்டும்.
- இரு கைகளையும் தரையில் ஊன்றிக்கொண்டு இடுப்பை முடிந்தவரை உயர்த்தியபடி 3-5 நொடிகள் இருக்க வேண்டும் பிறகு மெதுவாக சமநிலையில் படுத்திருக்க வேண்டும்.

மூச்சு மற்றும் வயிற்று பயிற்சி

- நேராக மற்றும் வசதியாக அமர்ந்து கொள்ள வேண்டும்.
- ஒரு கையை வயிற்றிலும் மற்றொரு கையை நெஞ்சிலும் வைத்துக்கொள்ள வேண்டும்.
- மூக்கின் வழியாக நன்றாக மூச்சை இழுத்துக்கொண்டு மெதுவாக வாய்வழியாக விட வேண்டும்.

ஸ்குவாட் பயிற்சி:

- பாதங்களை நன்றாக அகட்டி ஊன்றிக்கொண்டு நிற்கவும்.
- நாற்காலி உதவியுடன் இந்த பயிற்சியை செய்ய வேண்டும்.

- இரண்டு கைகளால் நாற்காலியைப் பிடித்துக்கொண்டு முடிந்து அளவு உட்கார்ந்து எழுந்திருக்கவும்.

ஸ்ட்ரச்சிங் பயிற்சி:

- நாற்காலி உதவியுடன் இந்த பயிற்சியை செய்ய வேண்டும்.
- நாற்காலியின் பின்னால் நேராக நிற்க வேண்டும்.
- நாற்காலியை இருகைகளால் பிடித்துக்கொள்ள வேண்டும்.
- ஒரு காலை முன்னும் மற்றொரு காலை பின்னும் வைத்துக்கொண்டு இடுப்பு மற்றும் தொடை தசைகளை முன்னோக்கி வளைக்க வேண்டும்.
- பிறகு பழைய இயல்பு நிலைக்கு திரும்பவும்.
- இதே பயிற்சியை பின்னால் வைத்த காலை முன்னோக்கி வைத்து செய்யவும்.

குறிப்பு:

இடுப்பு வளைய வலி அதிகமாக இருப்பின் மகப்பேறு மருத்துவரின் ஆலோசனை பெற்று மருந்துகளோ, இடுப்பு வளைய பெல்ட் மற்றும் பிசியோதெரபி எடுத்துக்கொள்ளவும்.

பி. எஸ். ஜி செவிலியர் கல்லூரி

கோயம்புத்தூர்

இடுப்பு வளைய வலி

சு. கீத் பிரியா

இரண்டாம் ஆண்டு

முதுகலை செவிலியர்

பி. எஸ். ஜி செவிலியர் கல்லூரி